

(12) **United States Patent**
Davis et al.

(10) **Patent No.:** **US 9,298,900 B2**
(45) **Date of Patent:** ***Mar. 29, 2016**

(54) **BEHAVIORAL FINGERPRINTING VIA
INFERRED PERSONAL RELATION**

(71) Applicant: **Elwha LLC**, Bellevue, WA (US)

(72) Inventors: **Marc E. Davis**, San Francisco, CA (US);
Matthew G. Dyor, Bellevue, WA (US);
Daniel A. Gerrity, Seattle, WA (US);
Xeudong Huang, Bellevue, WA (US);
Roderick A. Hyde, Redmond, WA (US);
Royce A. Levien, Lexington, MA (US);
Richard T. Lord, Tacoma, WA (US);
Robert W. Lord, Seattle, WA (US);
Mark A. Malamud, Seattle, WA (US);
Nathan P. Myhrvold, Bellevue, WA
(US); **Clarence T. Tegreene**, Mercer
Island, WA (US)

(73) Assignee: **Elwha LLC**, Bellevue, WA (US)

(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 141 days.

This patent is subject to a terminal dis-
claimer.

(21) Appl. No.: **13/665,830**

(22) Filed: **Oct. 31, 2012**

(65) **Prior Publication Data**

US 2014/0123253 A1 May 1, 2014

Related U.S. Application Data

(63) Continuation-in-part of application No. 13/631,667,
filed on Sep. 28, 2012, now Pat. No. 9,015,860, and a
continuation-in-part of application No. 13/602,061,
filed on Aug. 31, 2012, and a continuation-in-part of

(Continued)

(51) **Int. Cl.**
H04L 29/06 (2006.01)
G06F 21/31 (2013.01)

(Continued)

(52) **U.S. Cl.**
CPC **G06F 21/316** (2013.01); **G06F 2221/2111**
(2013.01)

(58) **Field of Classification Search**
None
See application file for complete search history.

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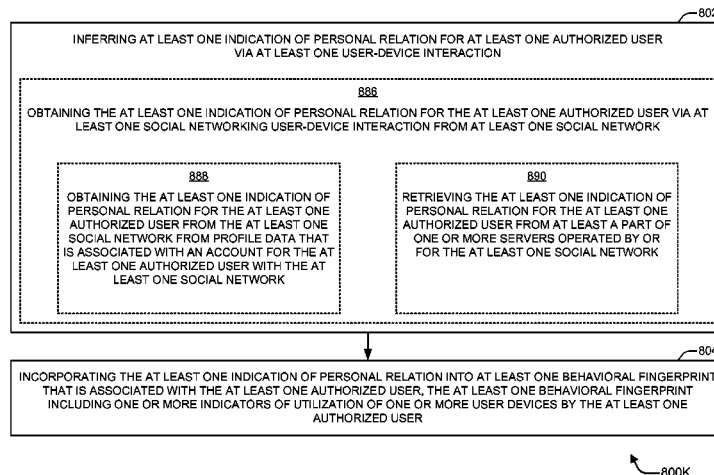
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Primary Examiner — Shin-Hon Chen

(57) **ABSTRACT**

Disclosed herein are example embodiments for behavioral
fingerprinting via inferred personal relation. For certain
example embodiments, at least one indication of personal
relation for at least one authorized user may be inferred via at
least one user-device interaction, and the at least one indica-
tion of personal relation may be incorporated into at least one
behavioral fingerprint that is associated with the at least one
authorized user, with the at least one behavioral fingerprint
including one or more indicators of utilization of one or more
user devices by the at least one authorized user.

35 Claims, 30 Drawing Sheets



Related U.S. Application Data

application No. 13/563,599, filed on Jul. 31, 2012, now Pat. No. 9,083,687, and a continuation-in-part of application No. 13/552,502, filed on Jul. 18, 2012, and a continuation-in-part of application No. 13/538,385, filed on Jun. 29, 2012, now Pat. No. 8,869,241, and a continuation-in-part of application No. 13/475,564, filed on May 18, 2012, now Pat. No. 8,713,704, and a continuation-in-part of application No. 13/373,682, filed on Nov. 23, 2011, and a continuation-in-part of application No. 13/373,677, filed on Nov. 23, 2011, now Pat. No. 8,688,980, and a continuation-in-part of application No. 13/373,680, filed on Nov. 23, 2011, now Pat. No. 8,689,350, and a continuation-in-part of application No. 13/373,684, filed on Nov. 23, 2011, and a continuation-in-part of application No. 11/373,685, filed on Nov. 23, 2011, now Pat. No. 8,555,077.

- (60) Provisional application No. 61/572,309, filed on Oct. 13, 2011, provisional application No. 61/632,836, filed on Sep. 24, 2011.

(51) **Int. Cl.**

G06F 7/04 (2006.01)
G06F 15/16 (2006.01)
G06F 17/30 (2006.01)

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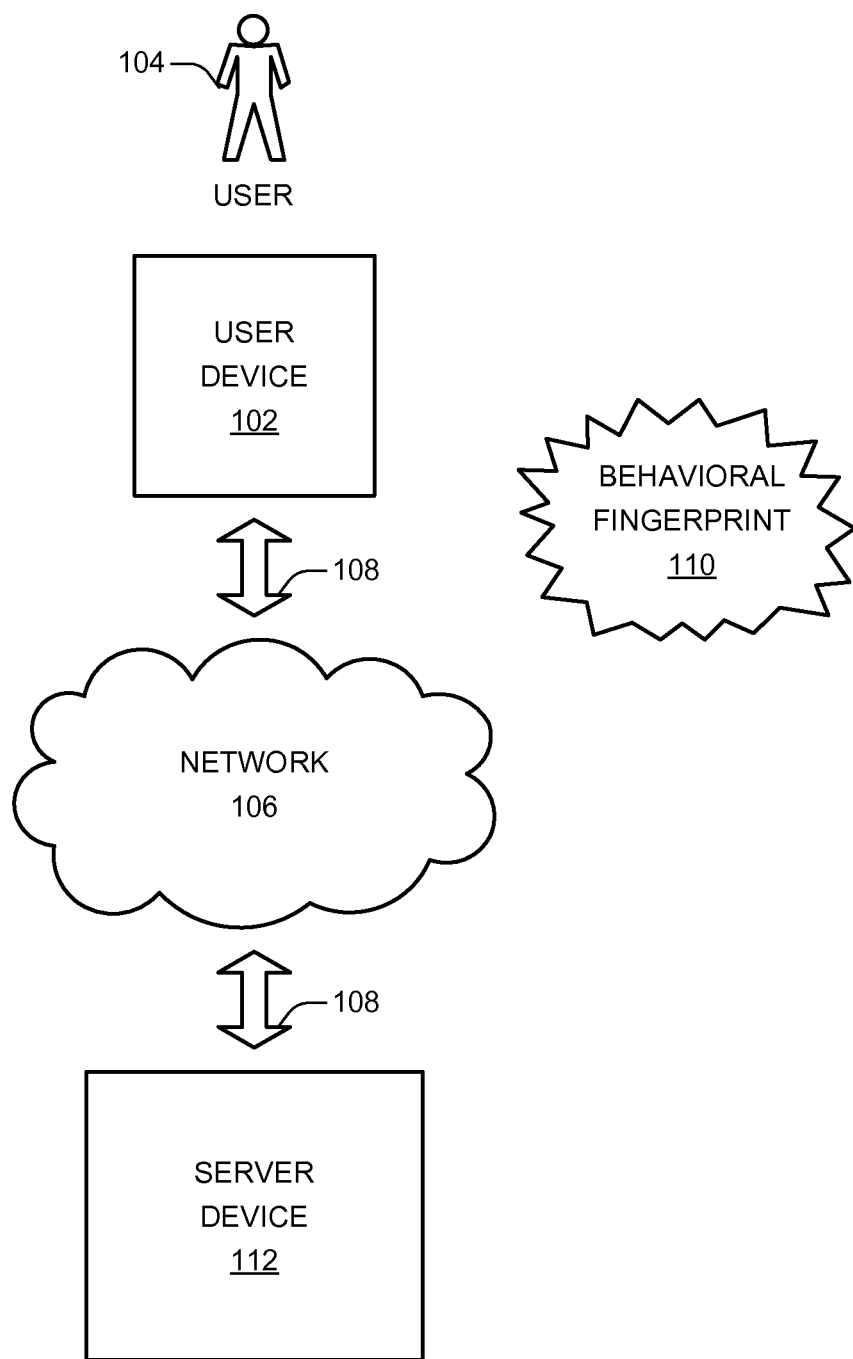


FIG. 1

100

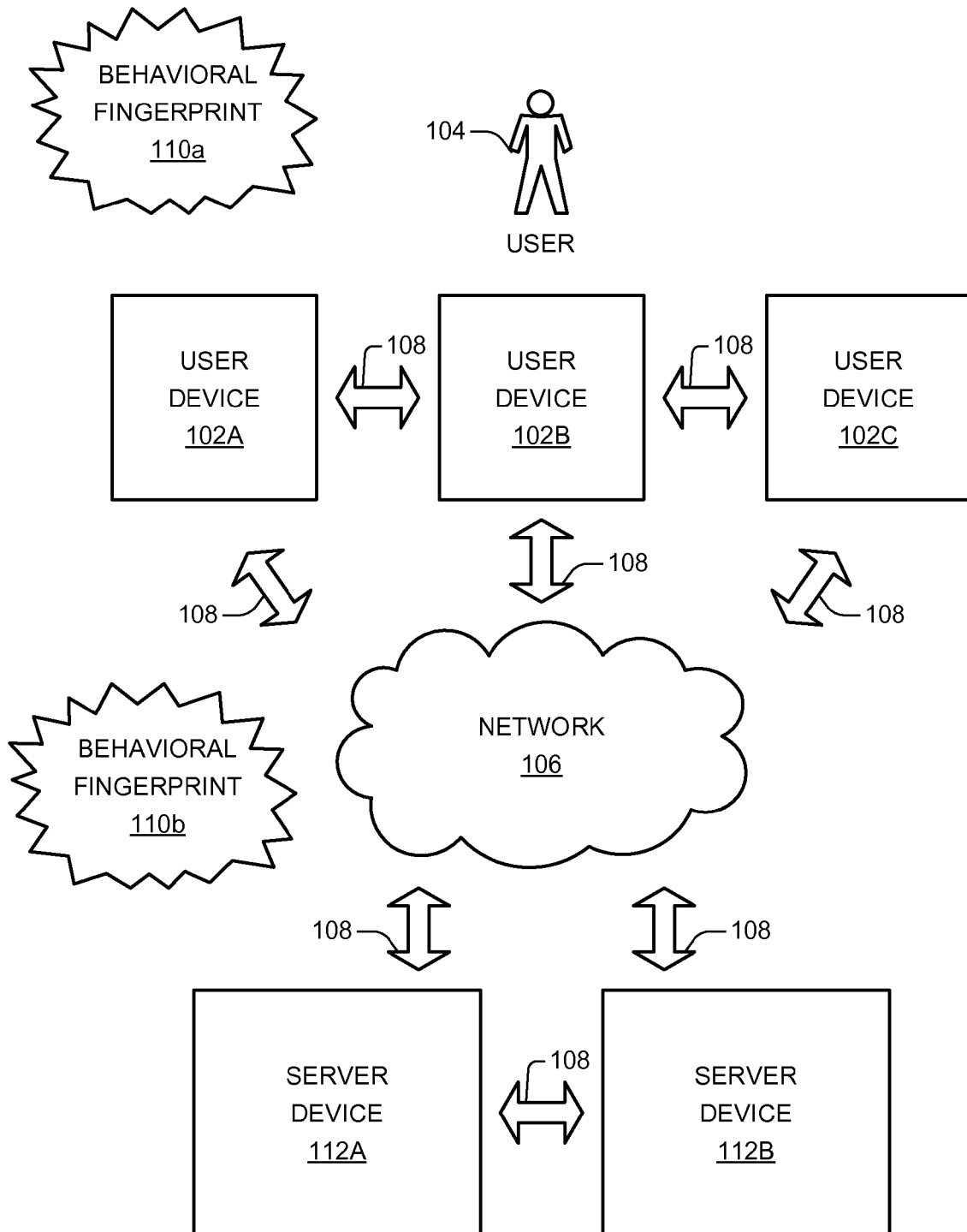


FIG. 2A

200A

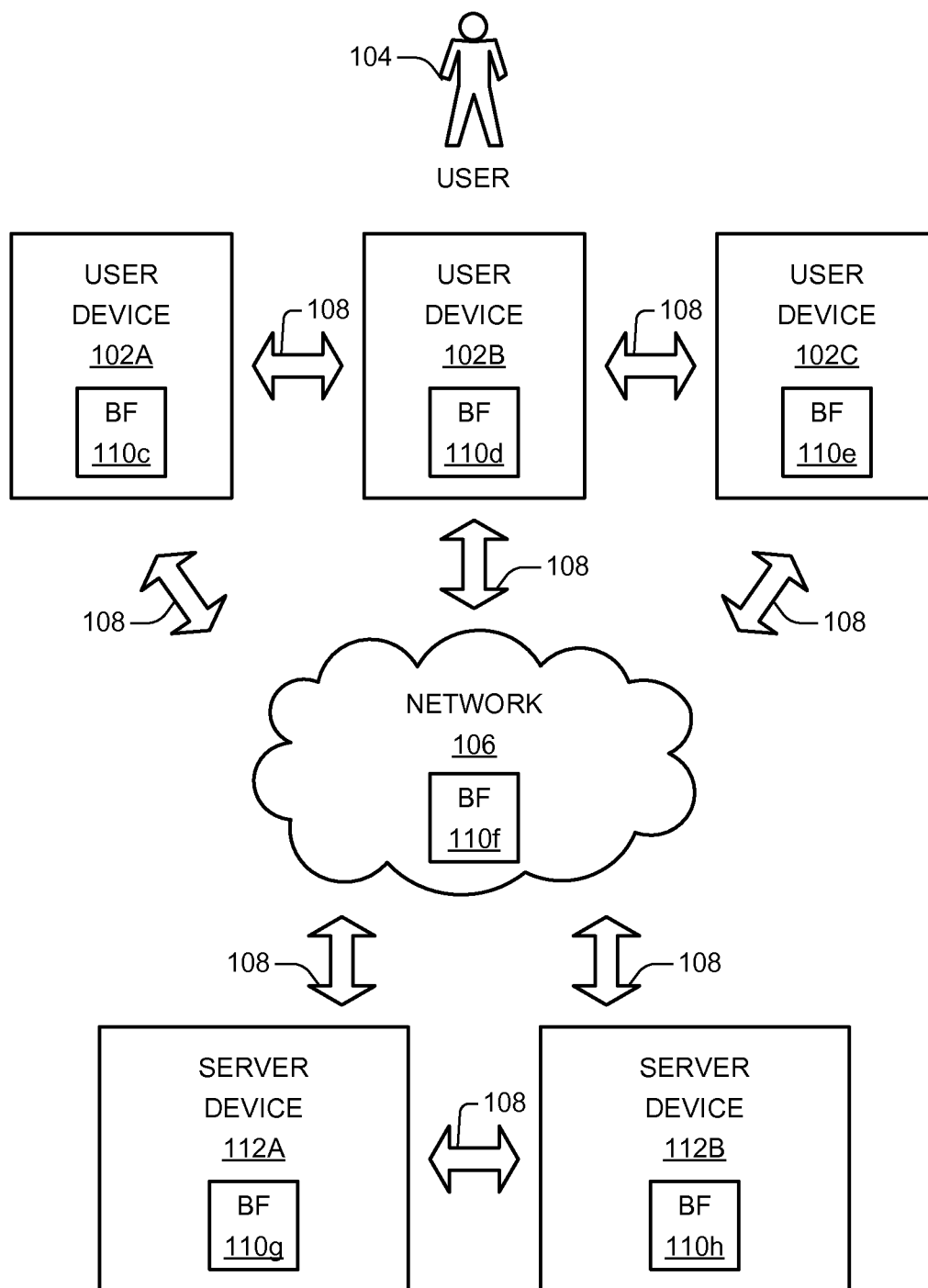


FIG. 2B

200B

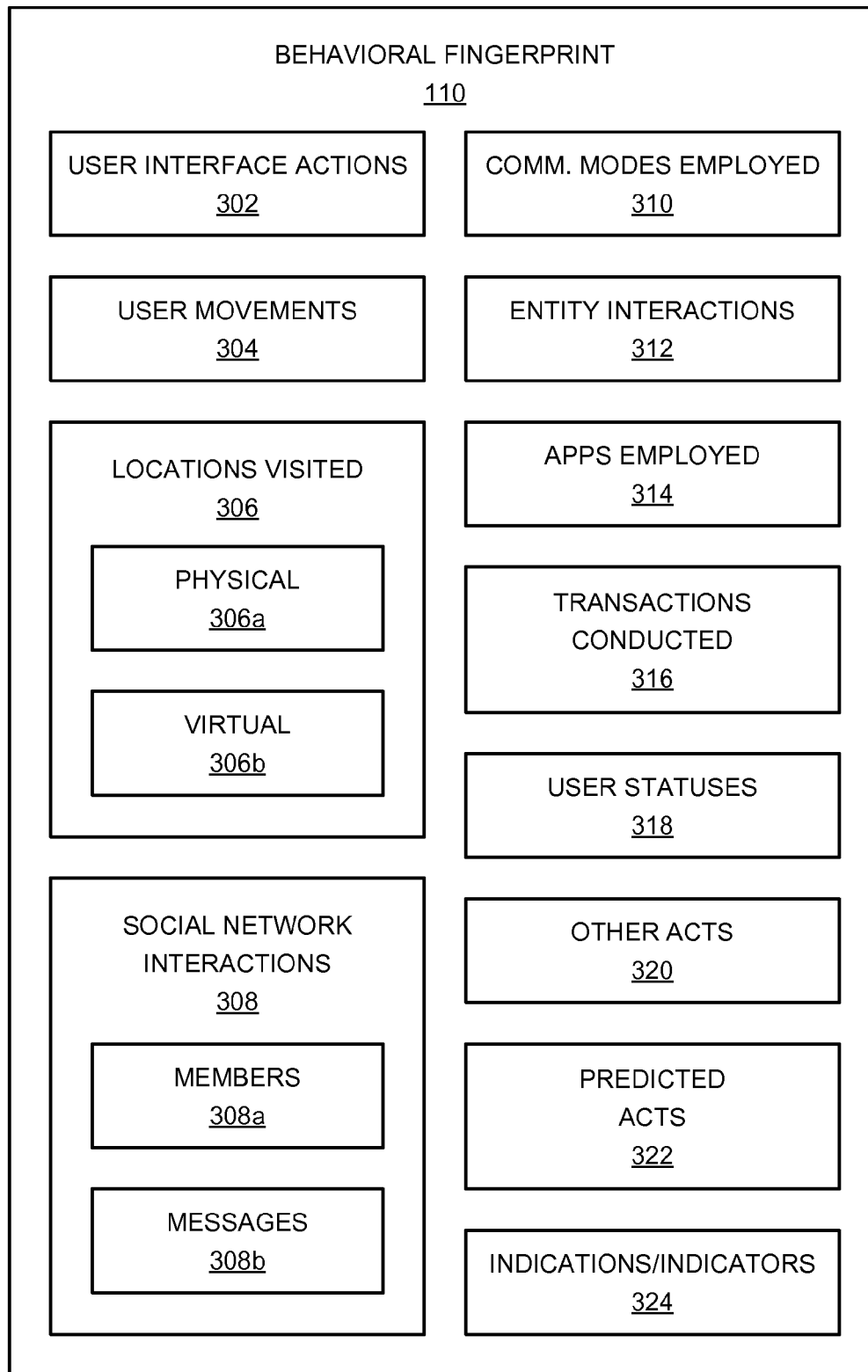
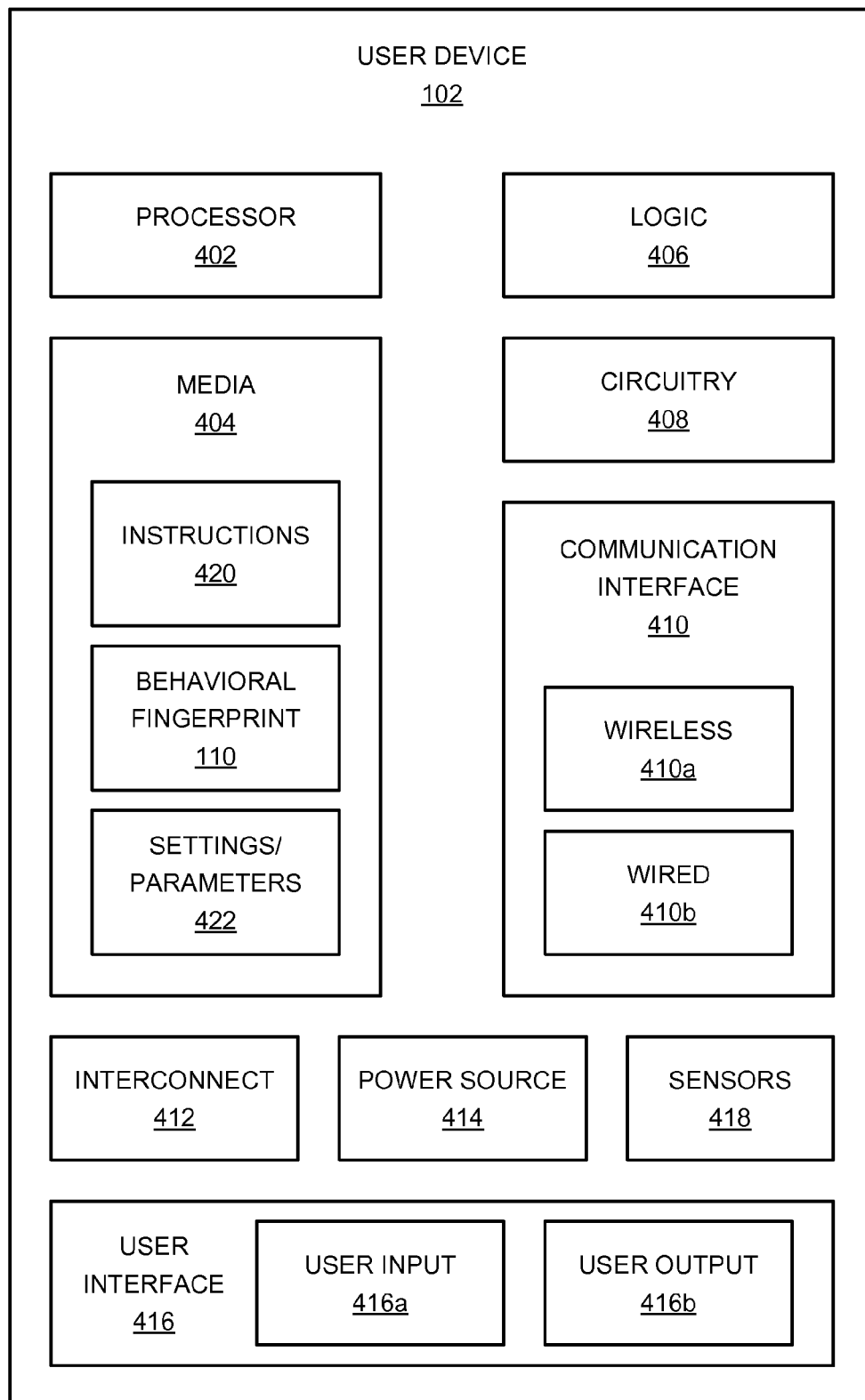


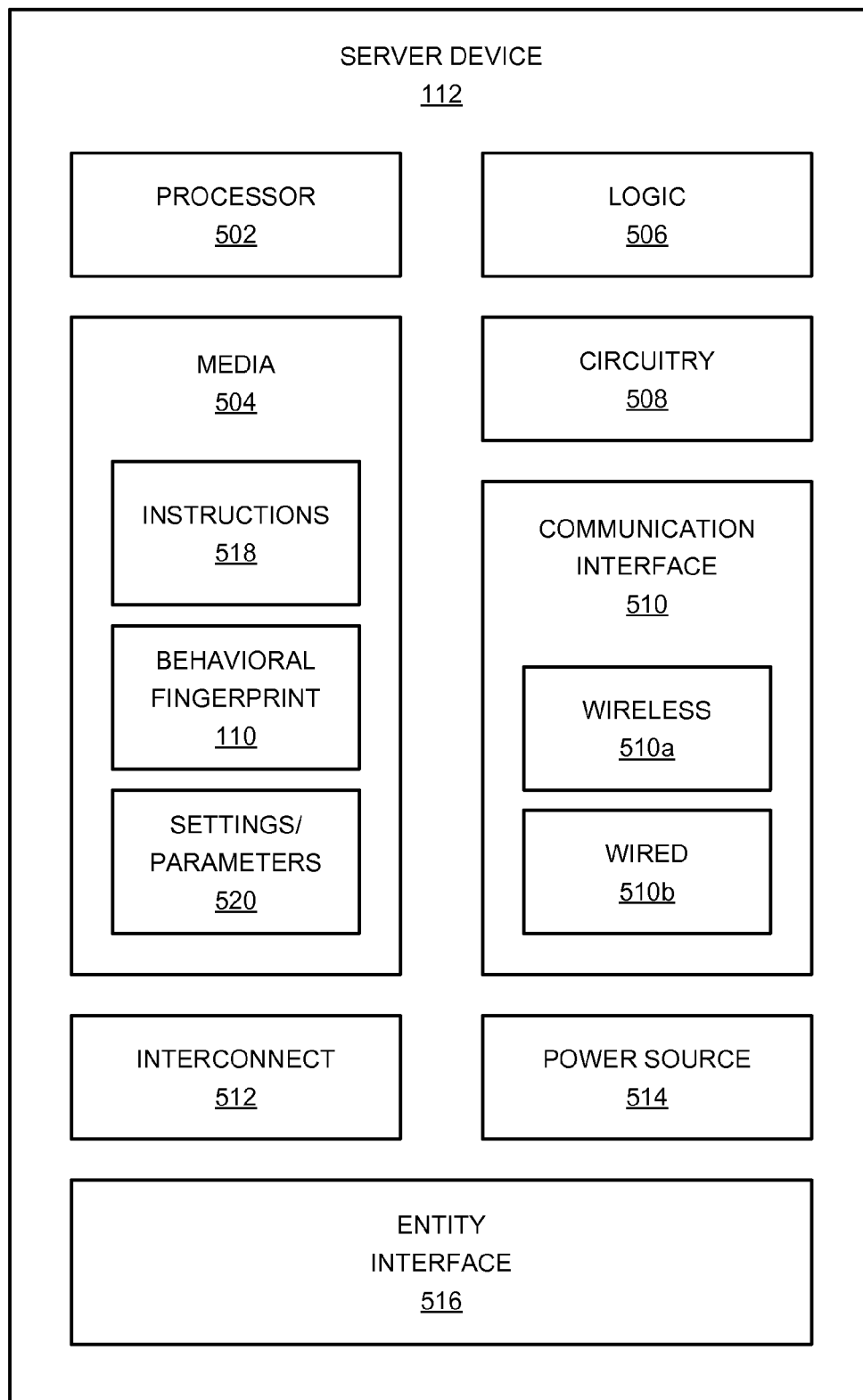
FIG. 3

300



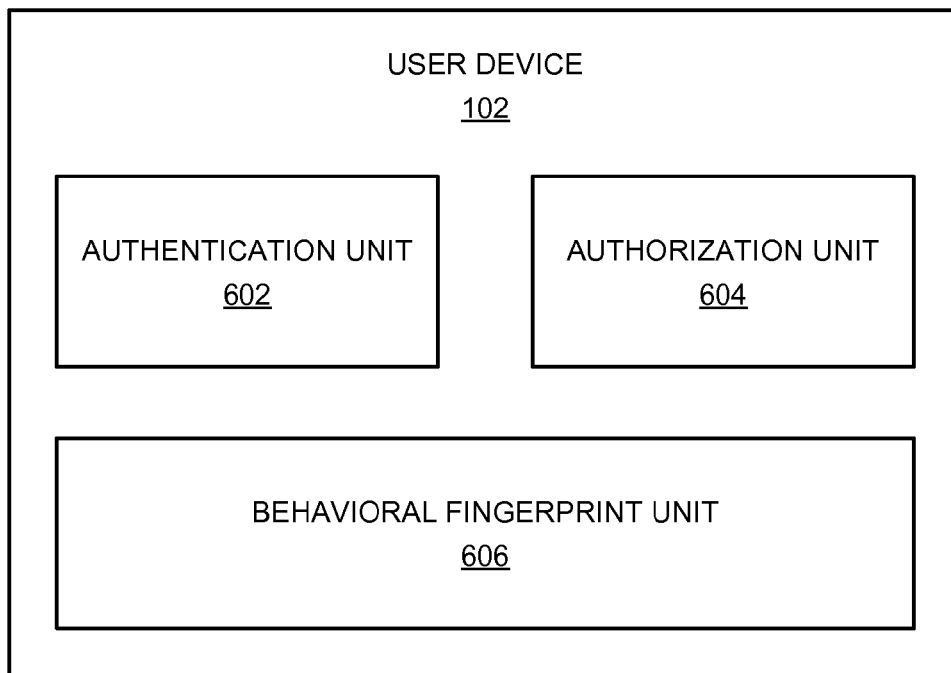
400—

FIG. 4

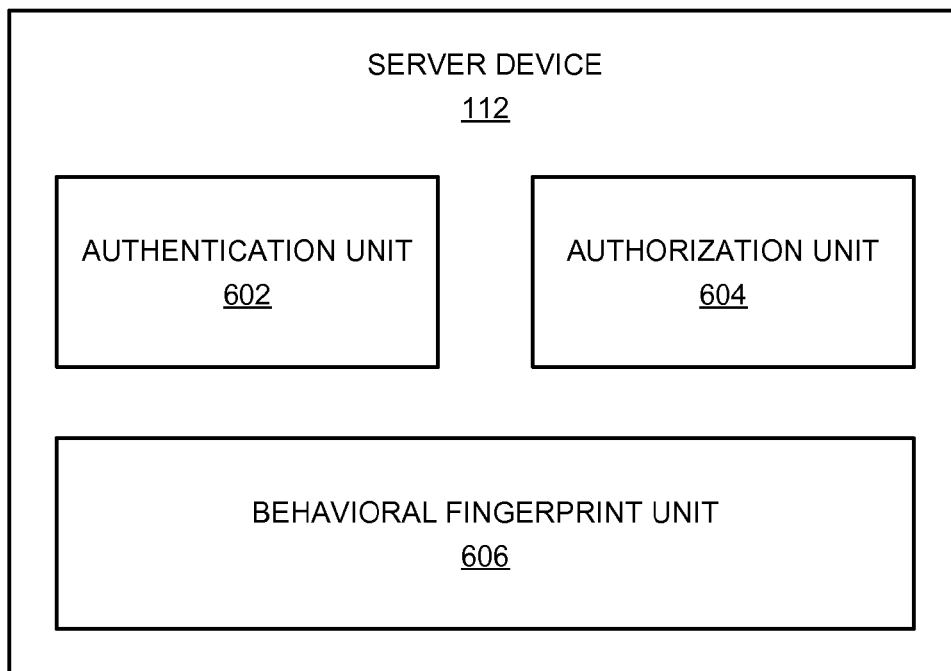


500—

FIG. 5

**FIG. 6A**

600A

**FIG. 6B**

600B

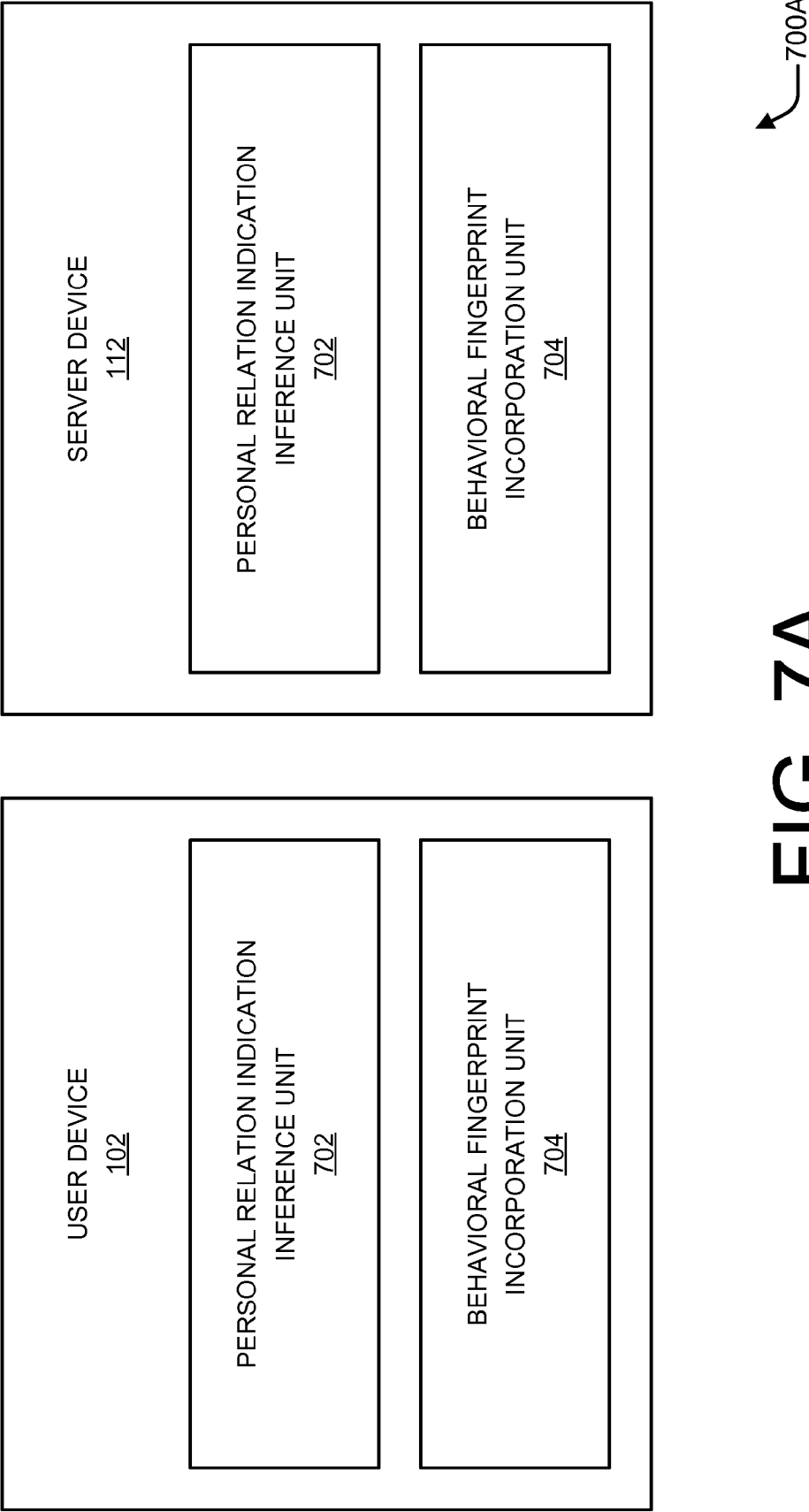
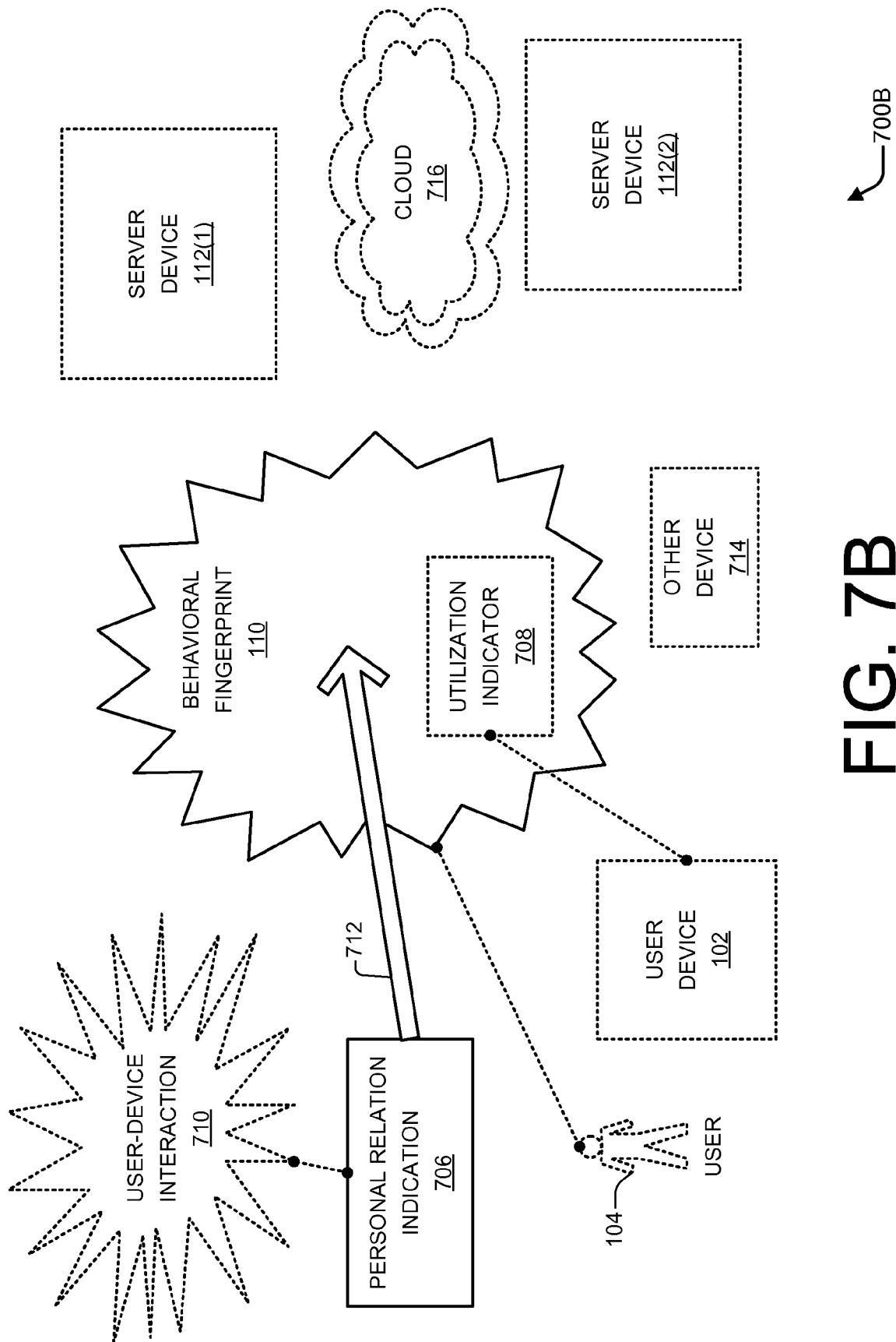


FIG. 7A



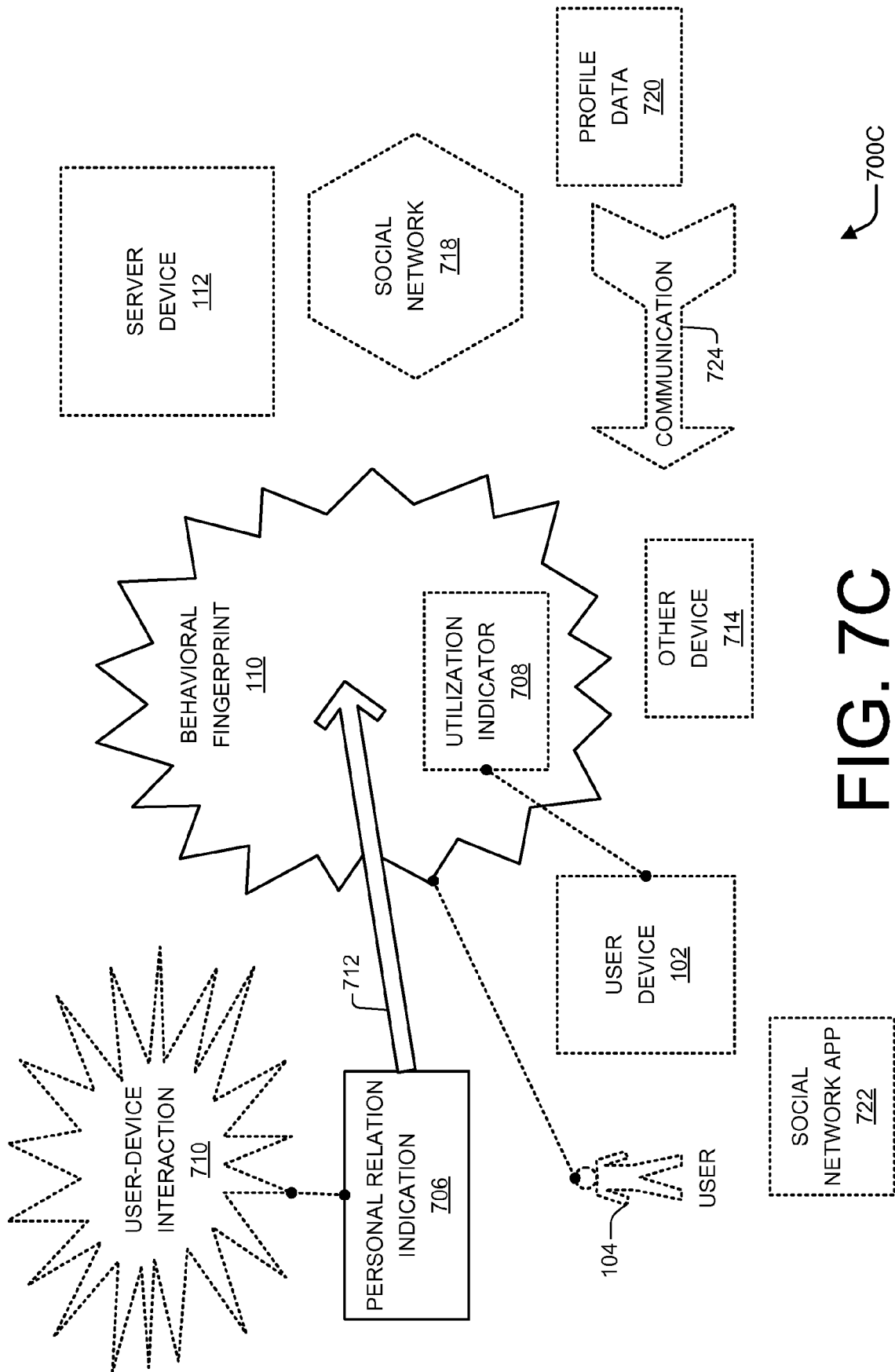
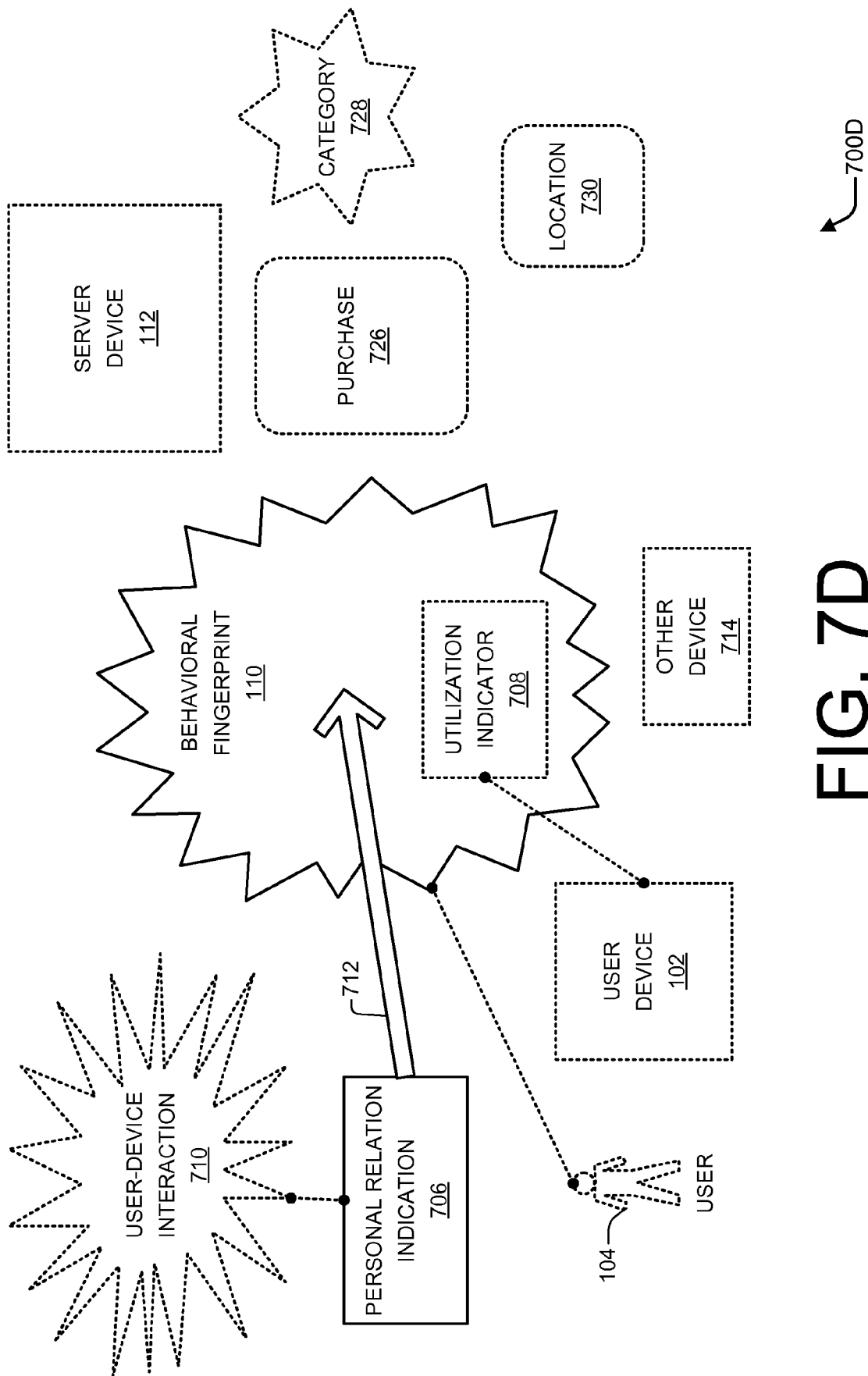


FIG. 7C



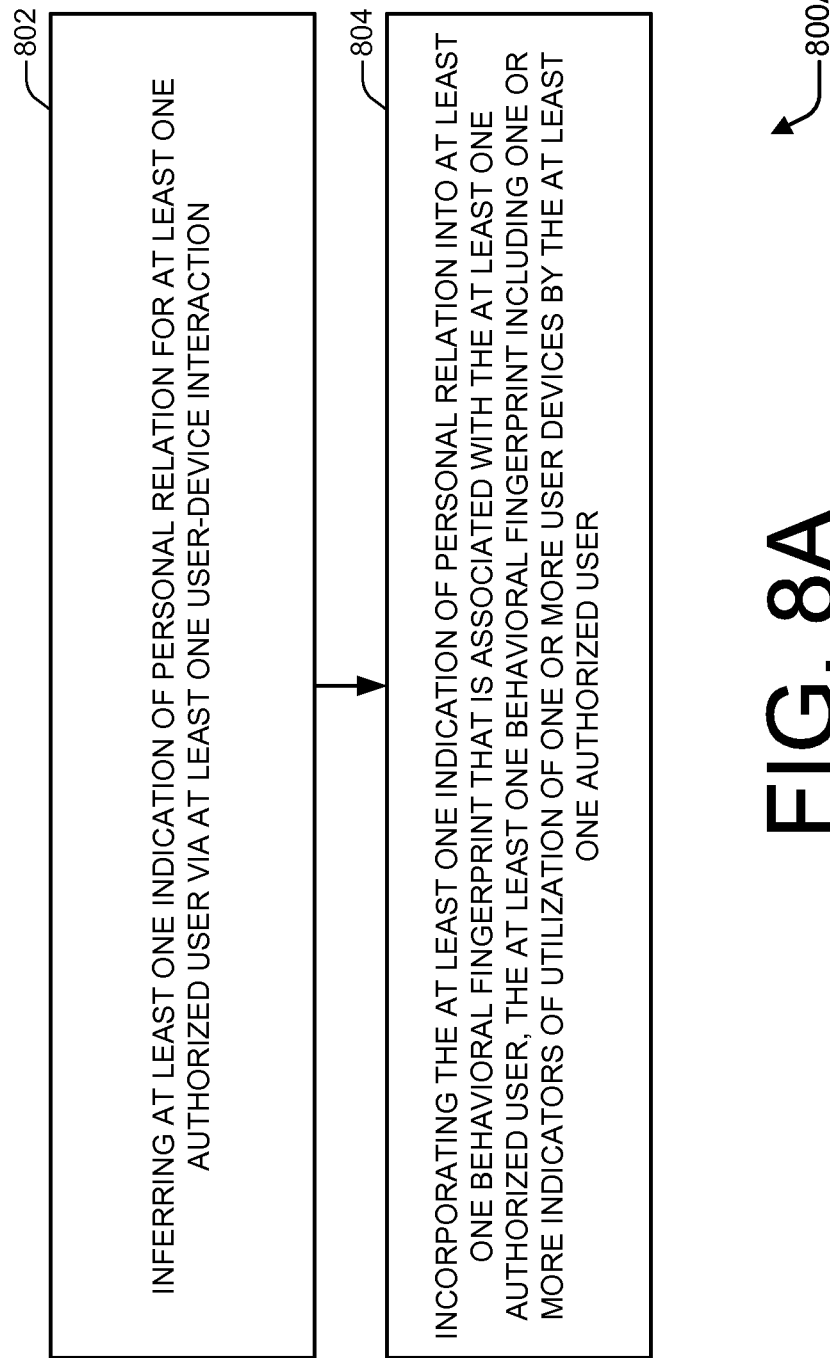
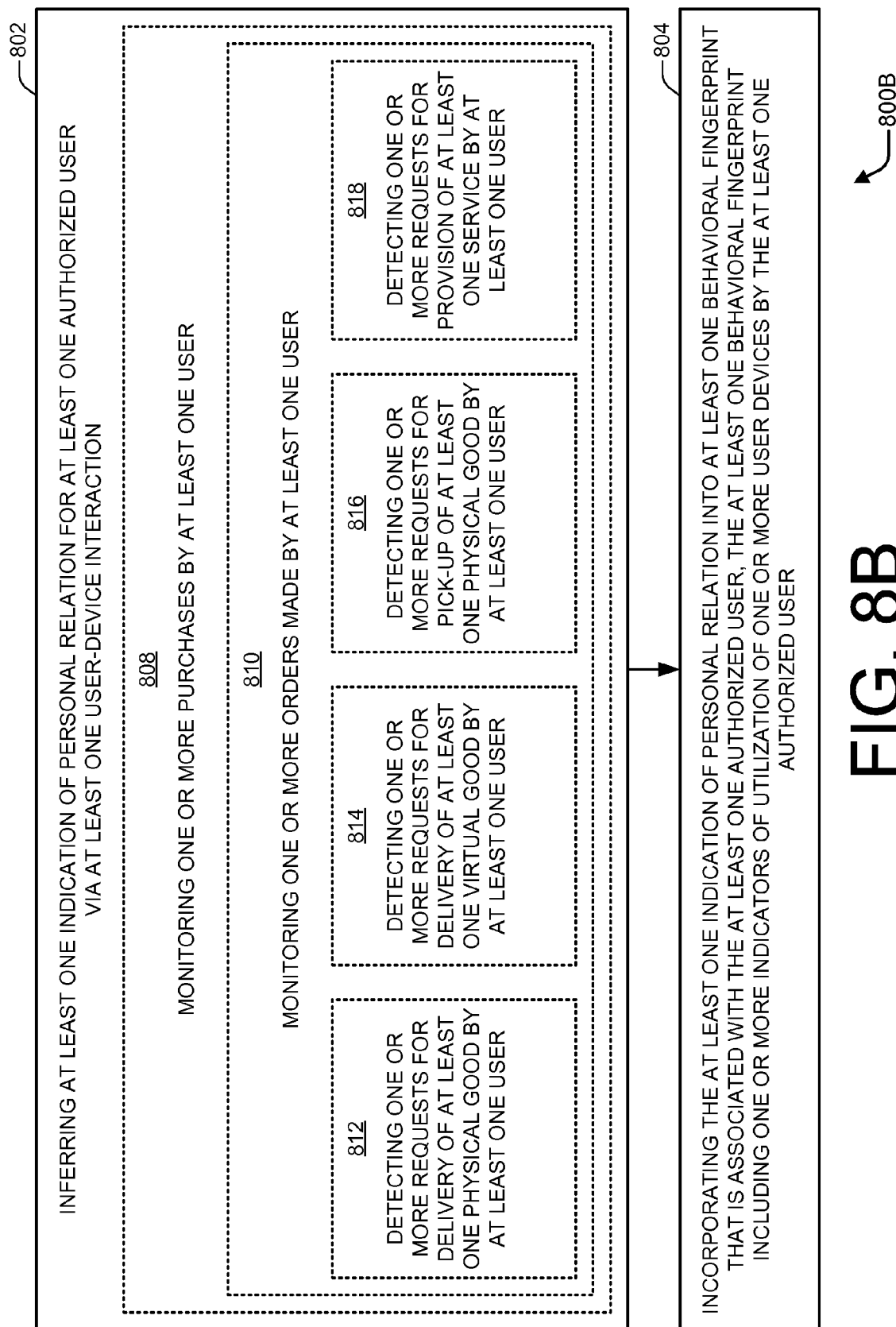


FIG. 8A



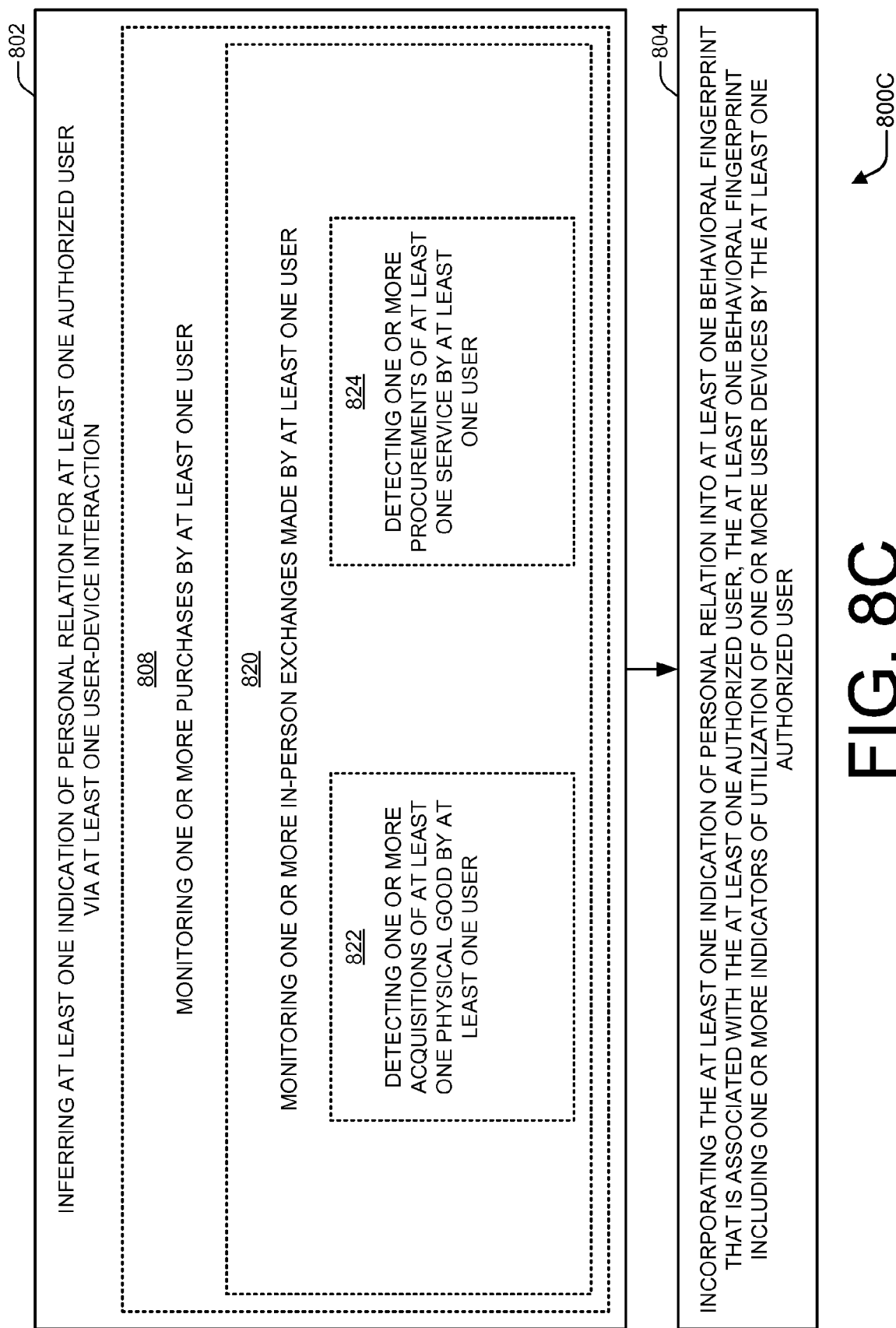
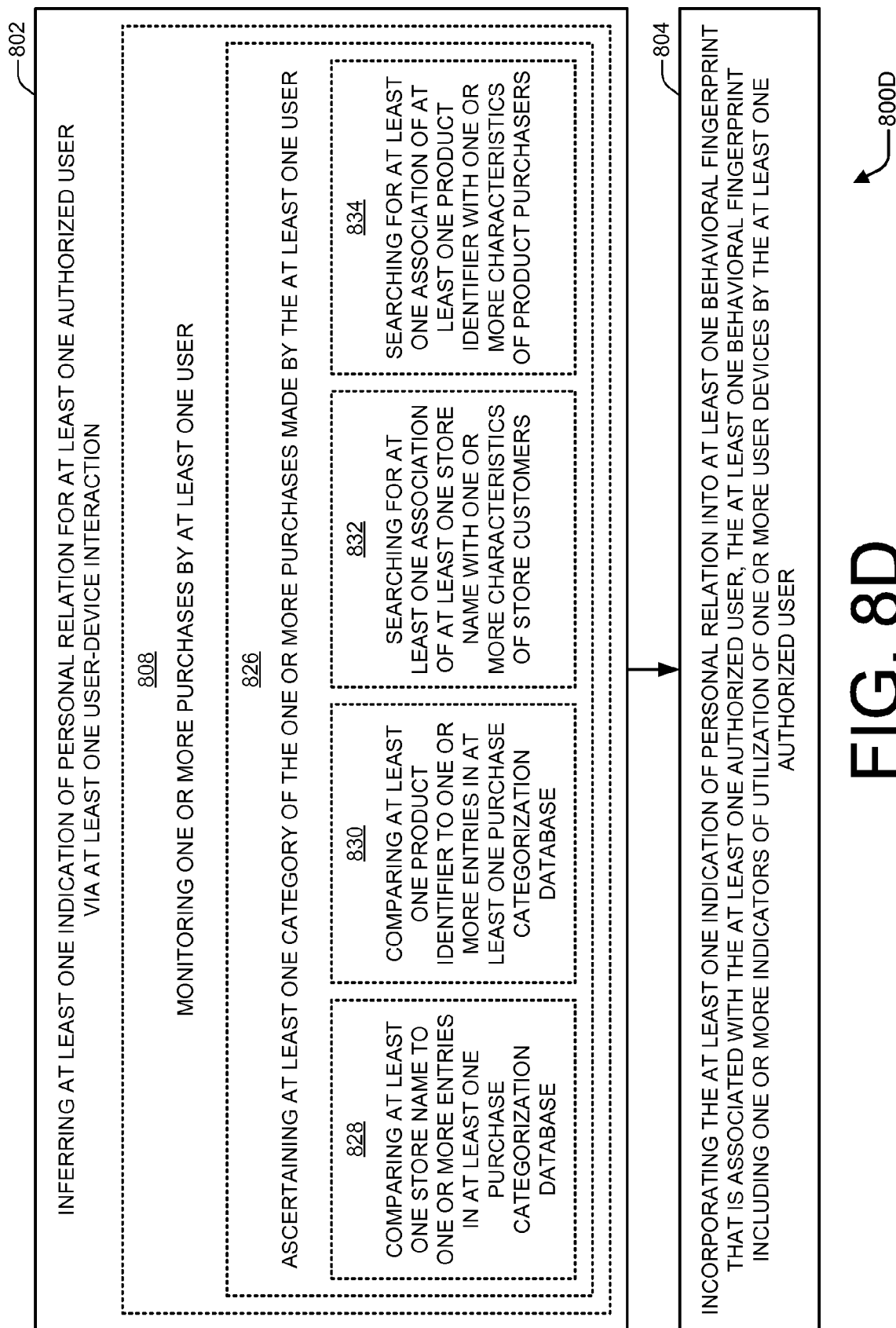
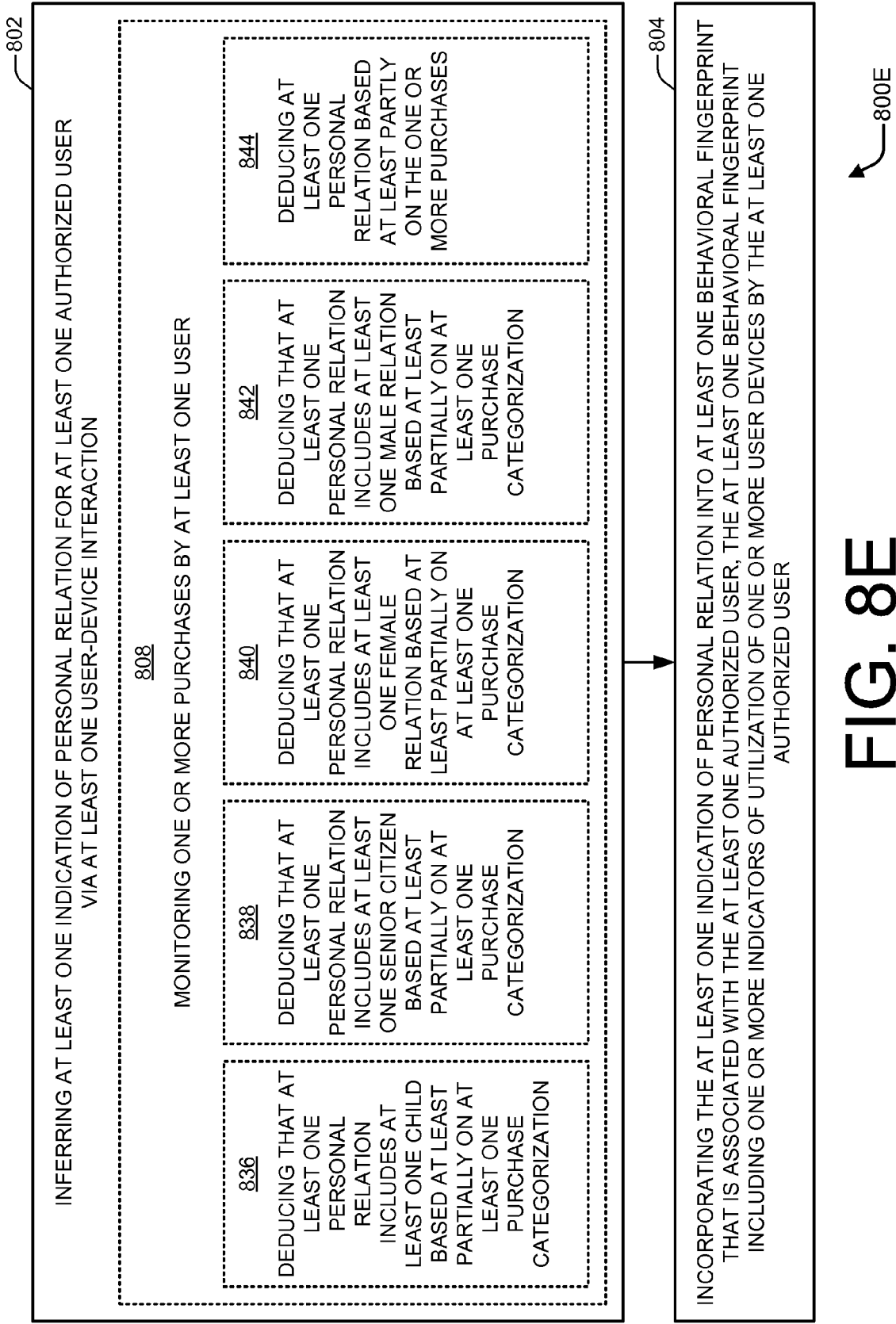
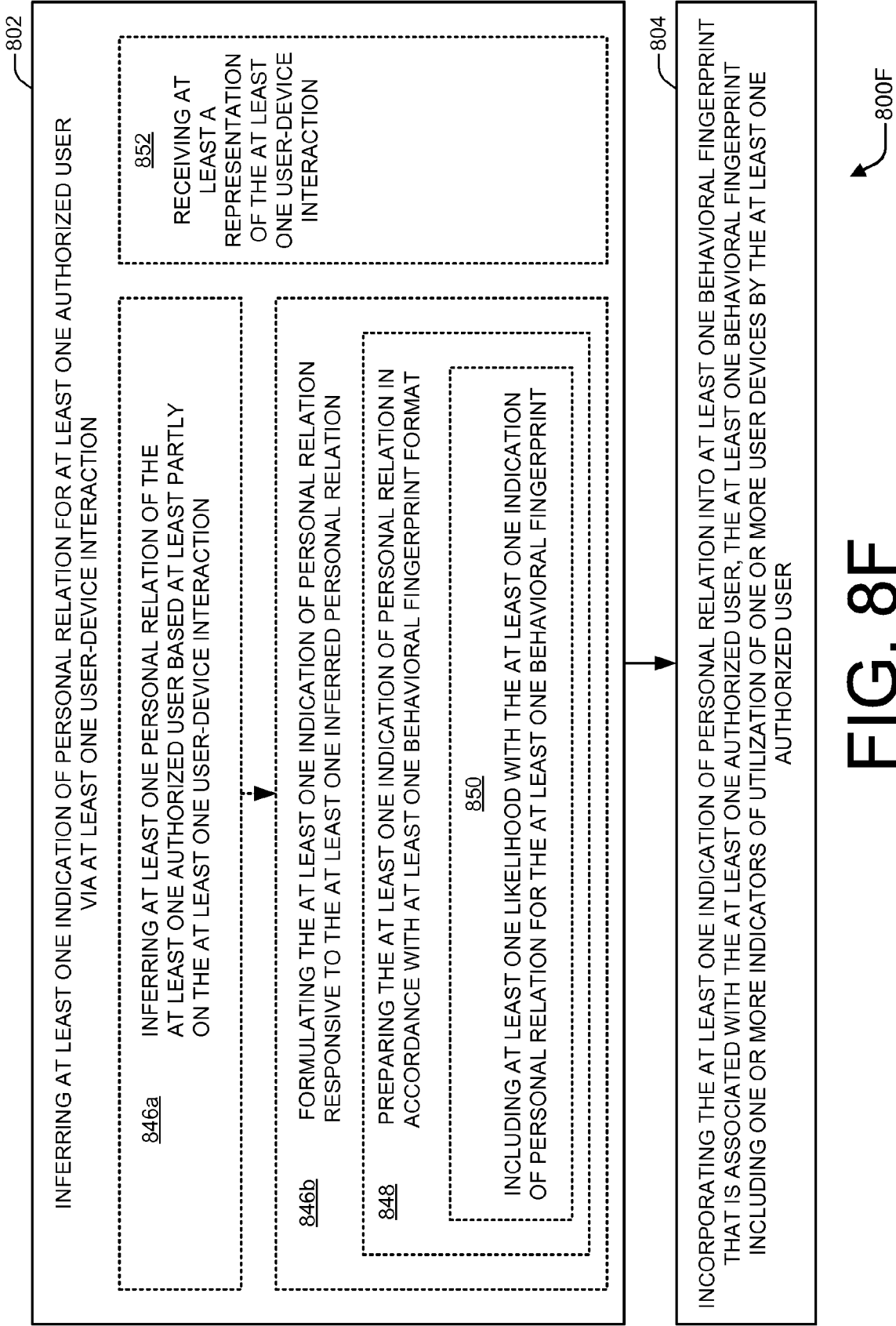


FIG. 800C







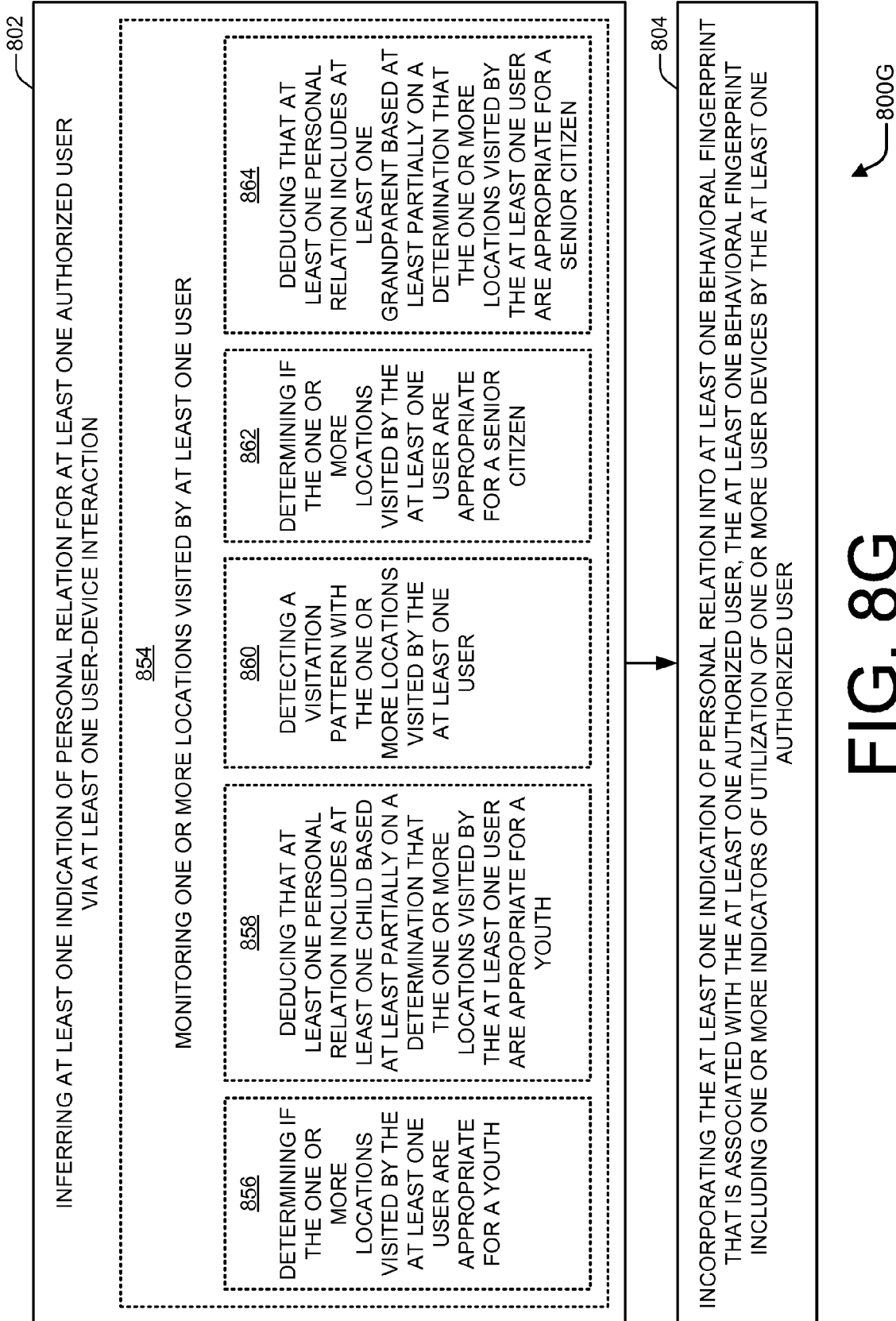
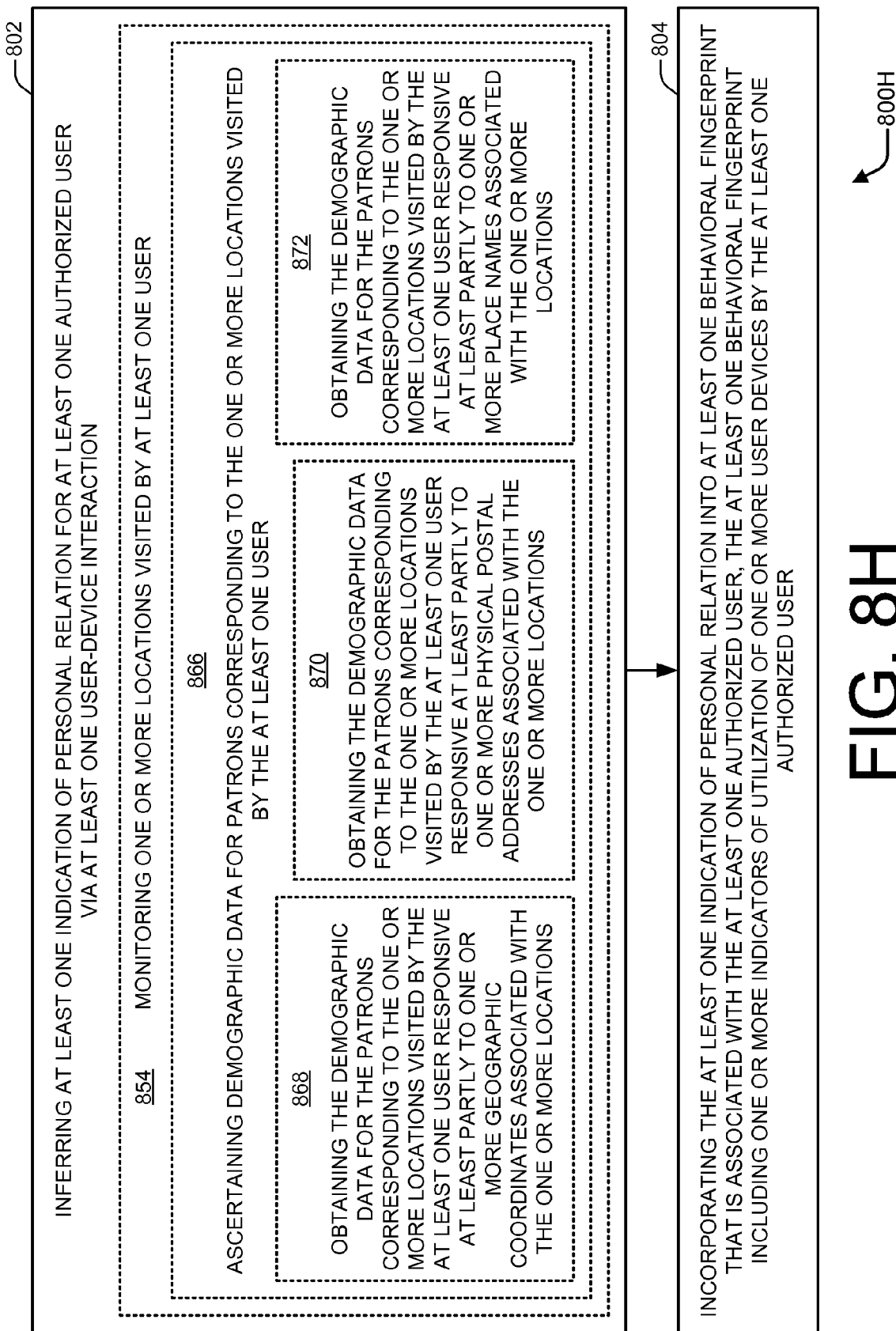


FIG. 8G



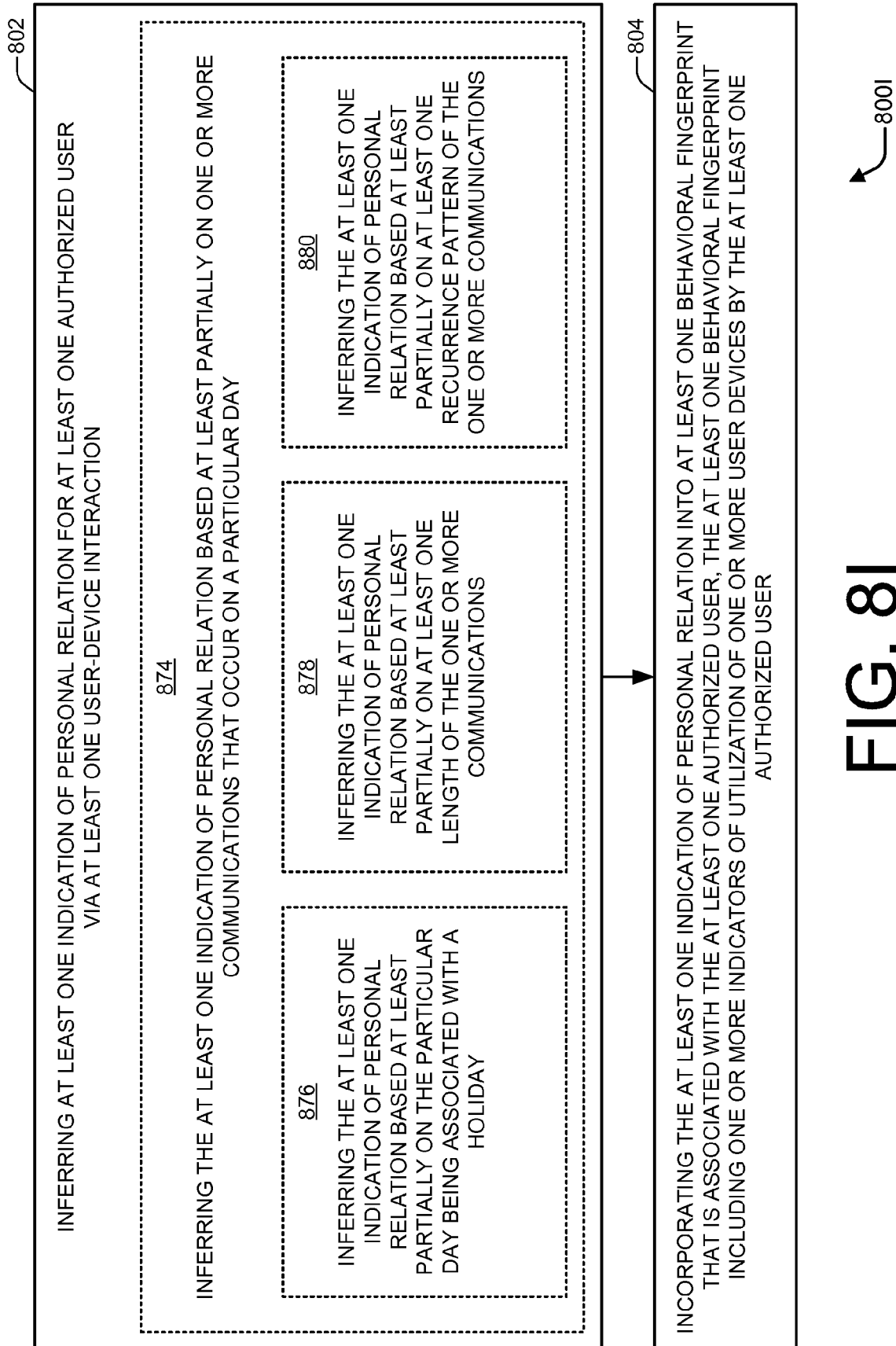


FIG. 8I

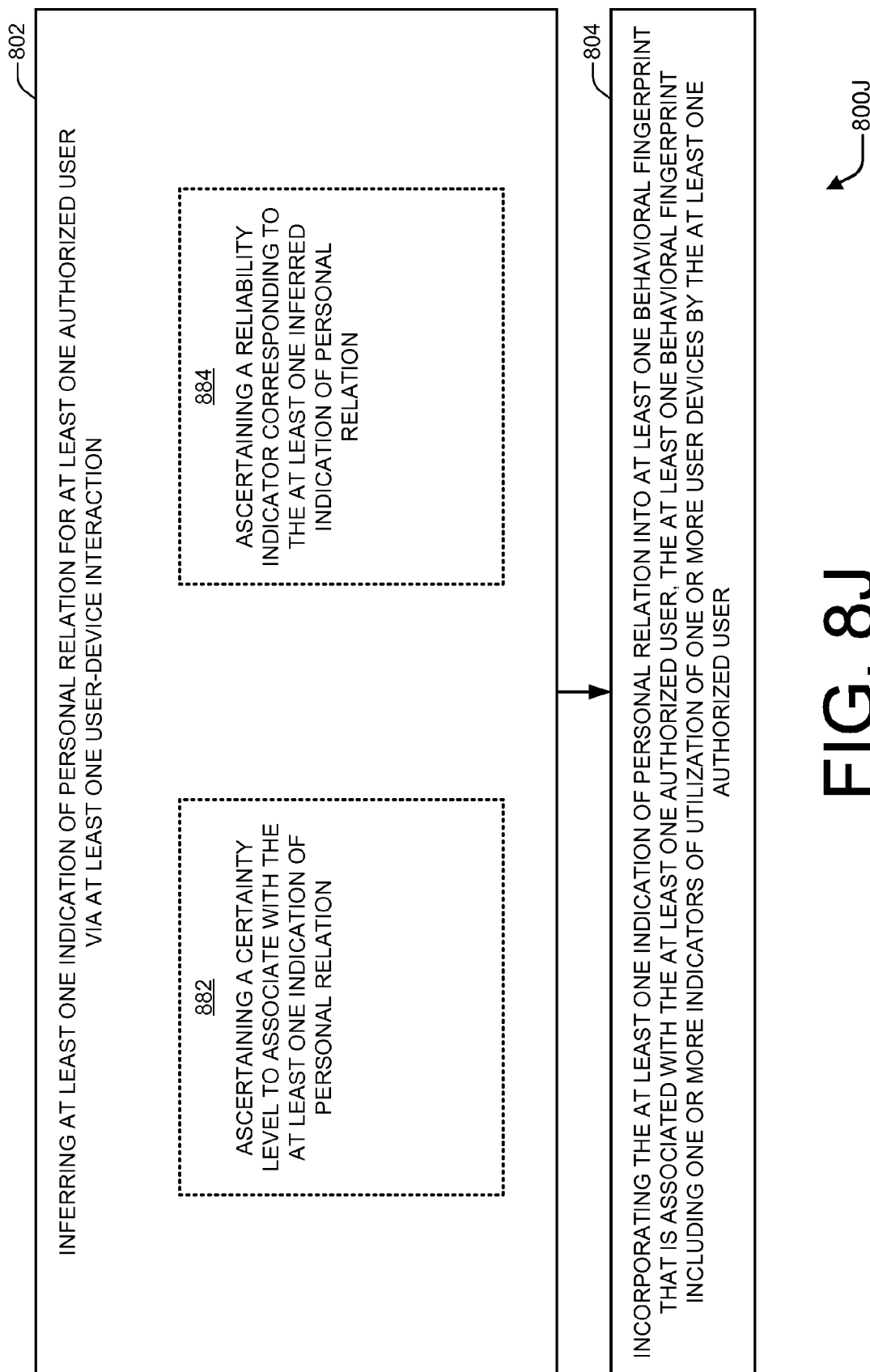
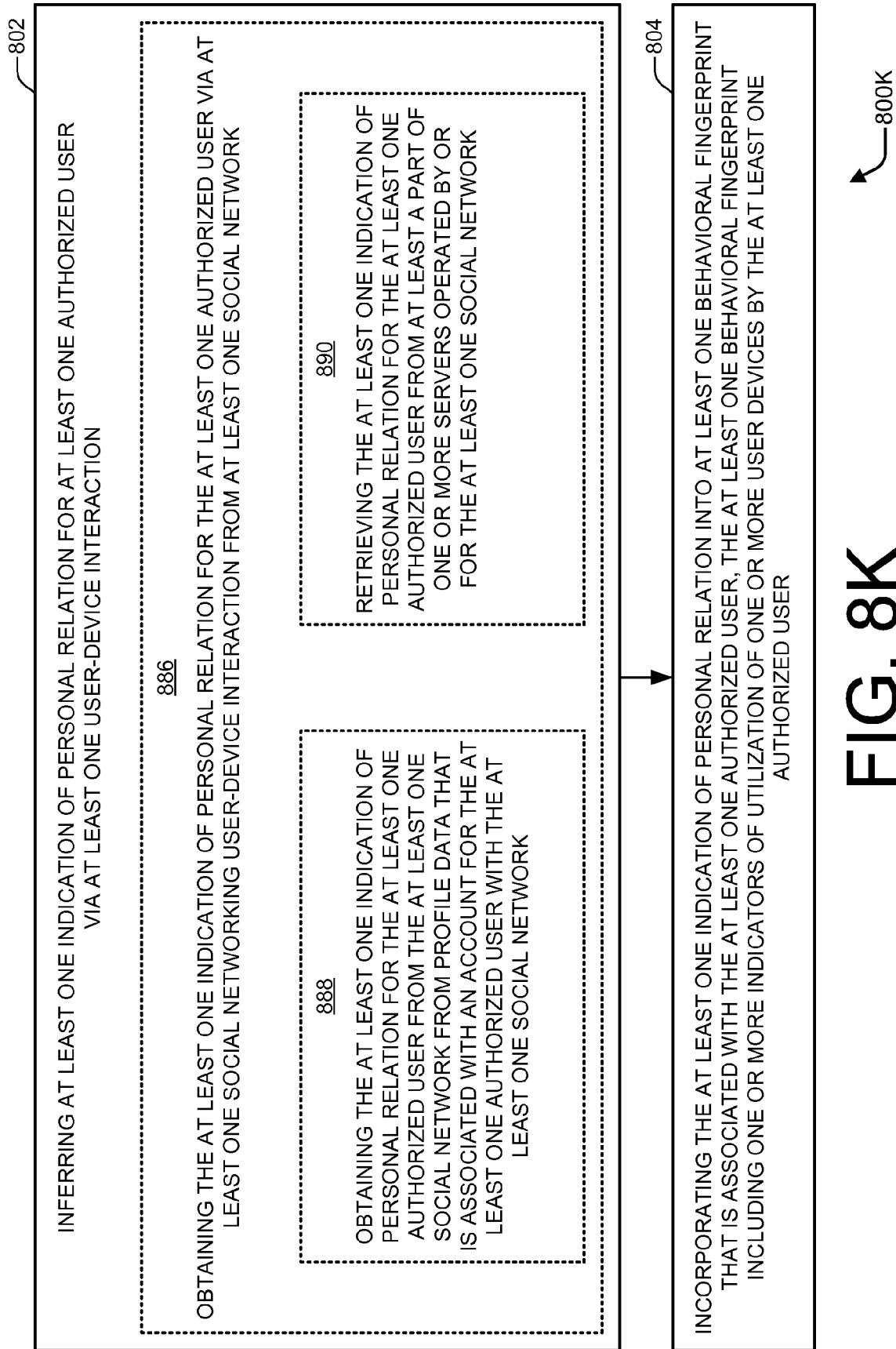
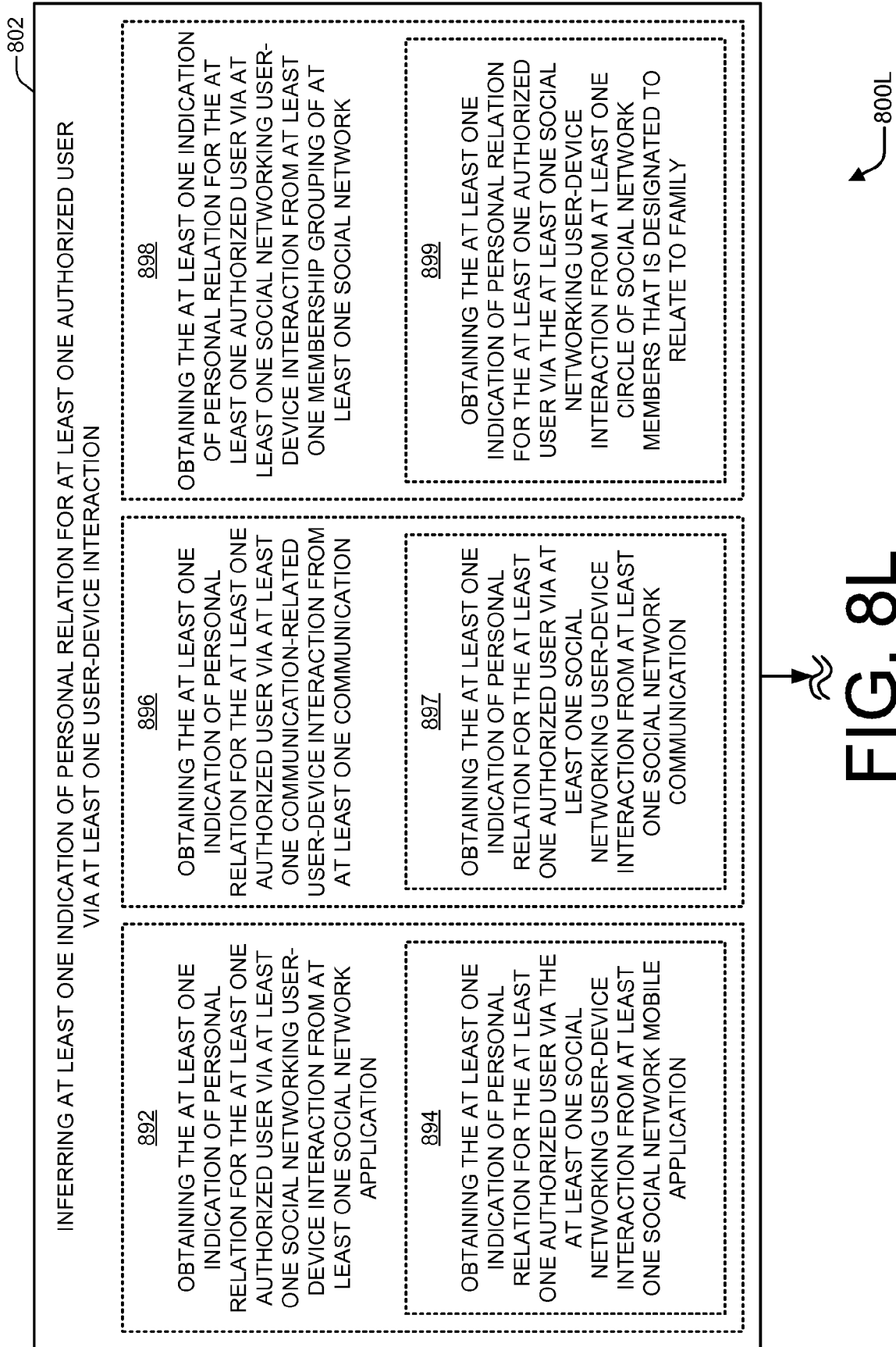
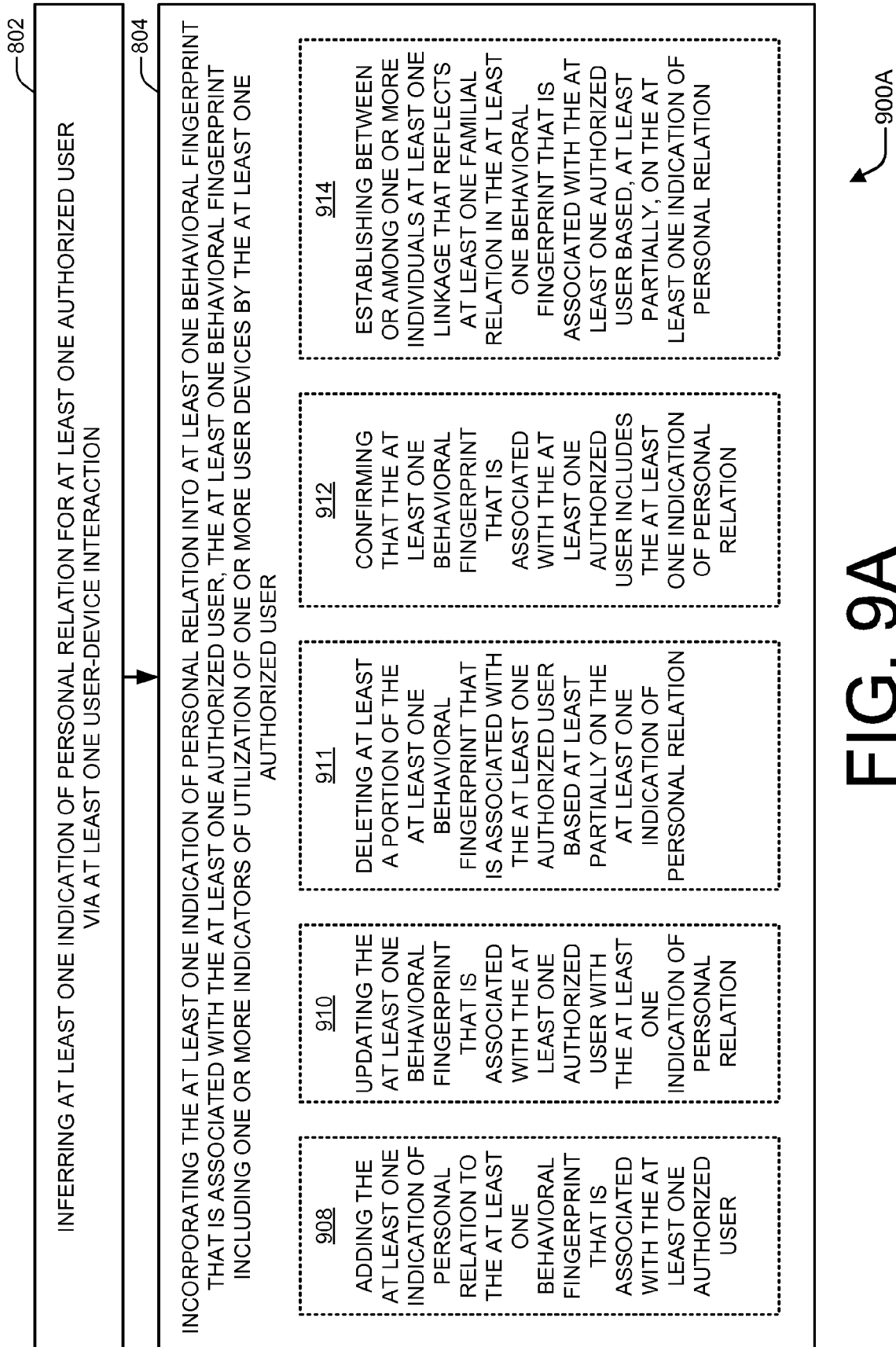
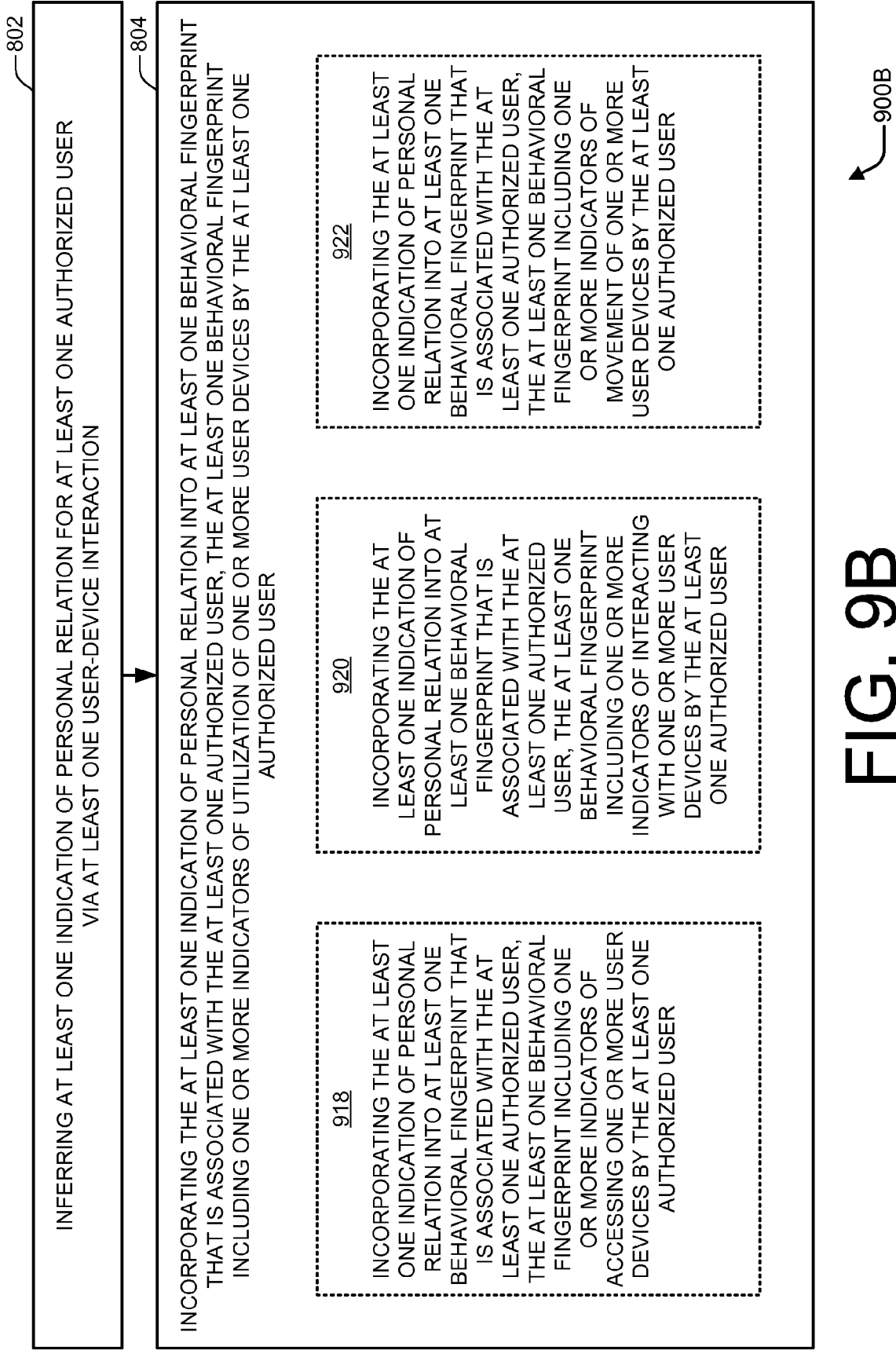


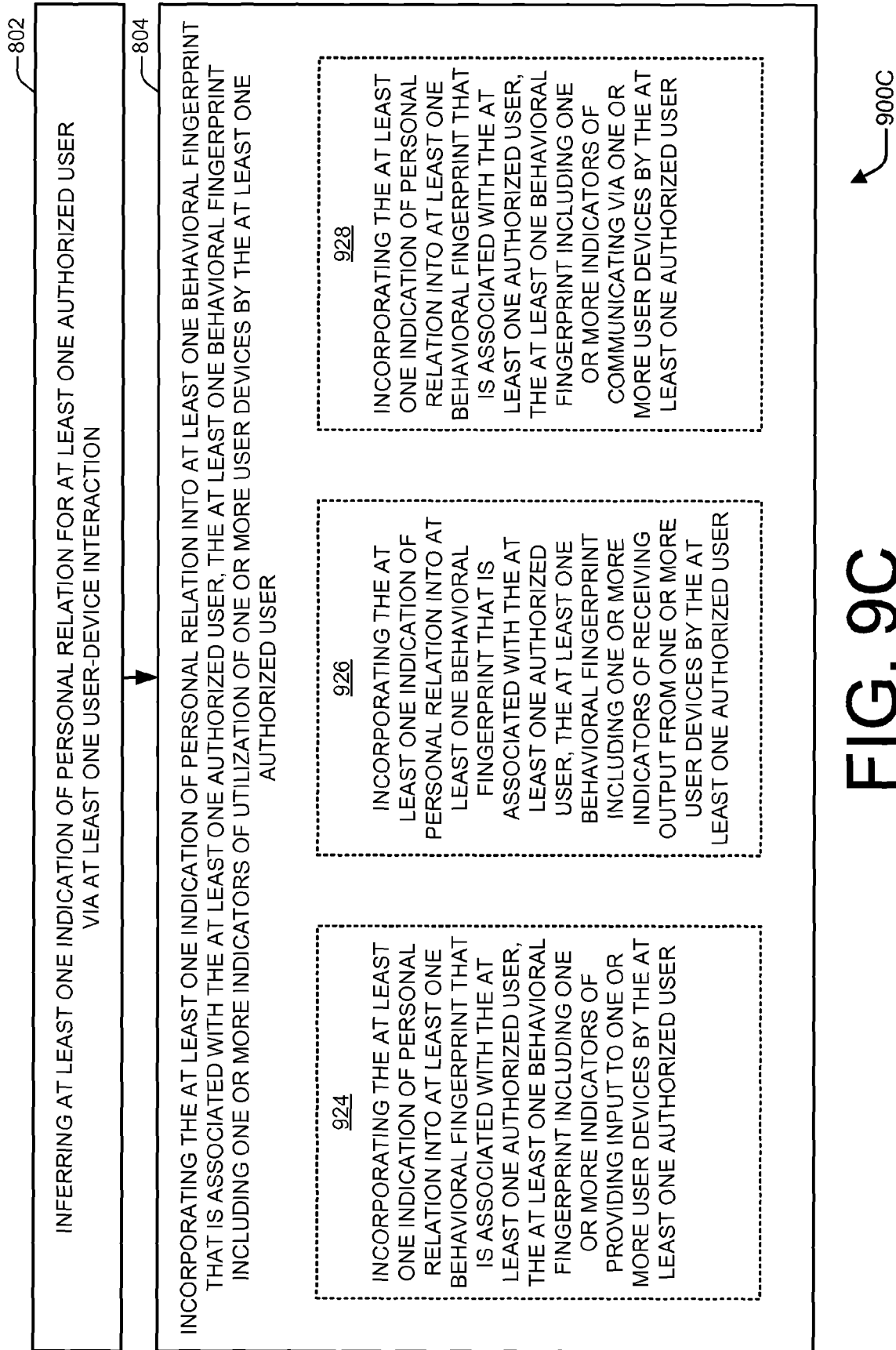
FIG. 8J

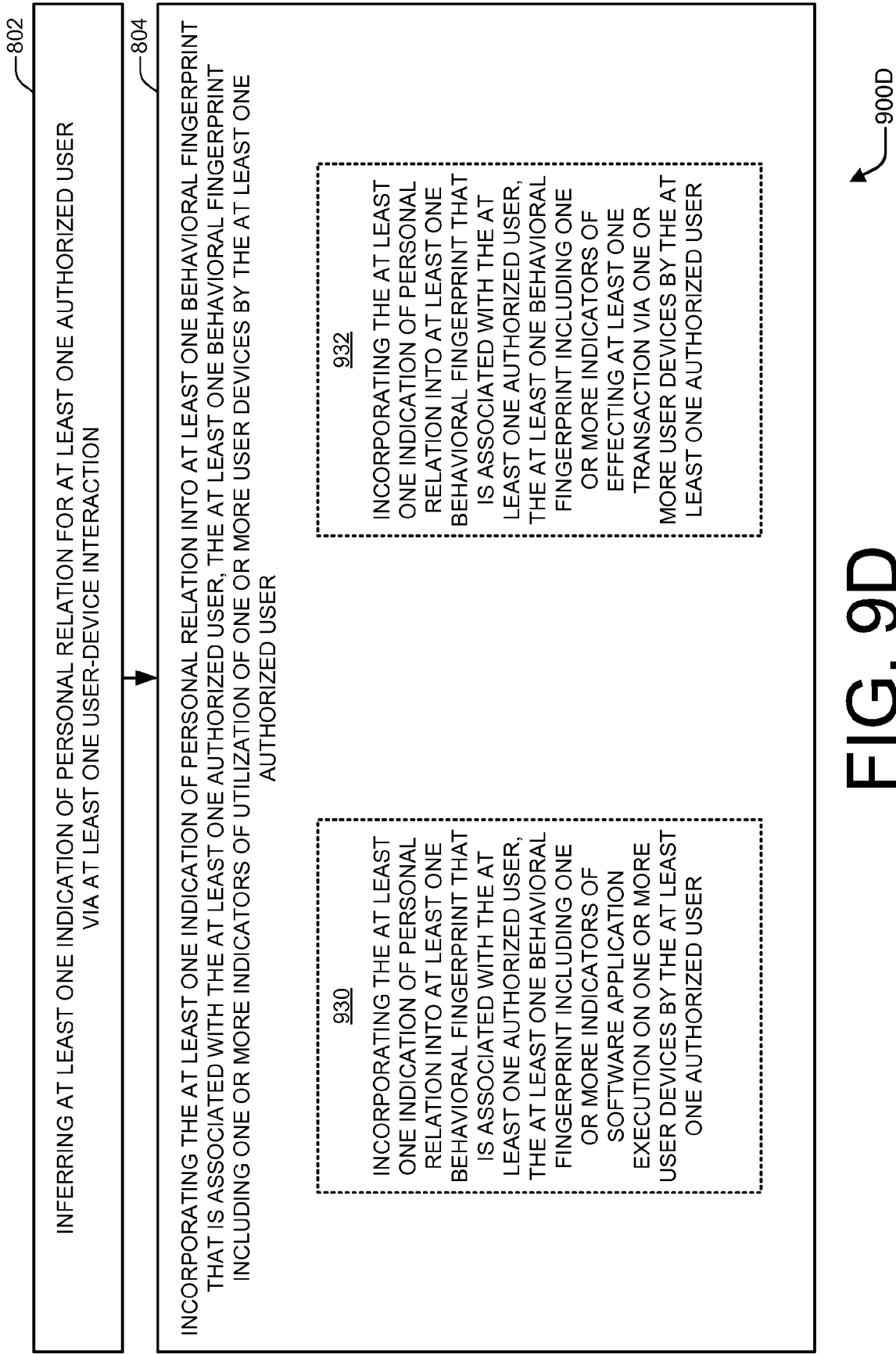












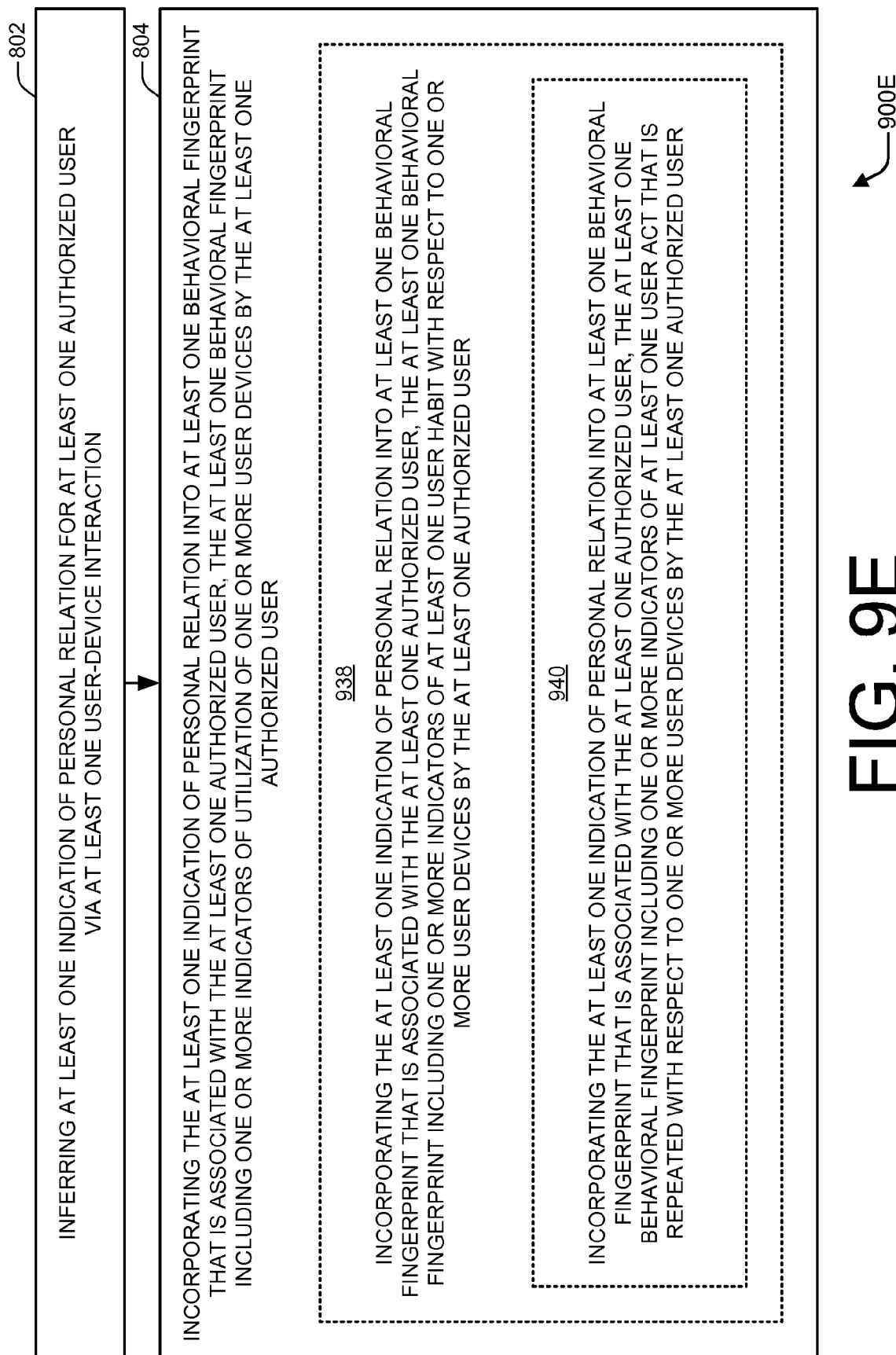


FIG. 9E

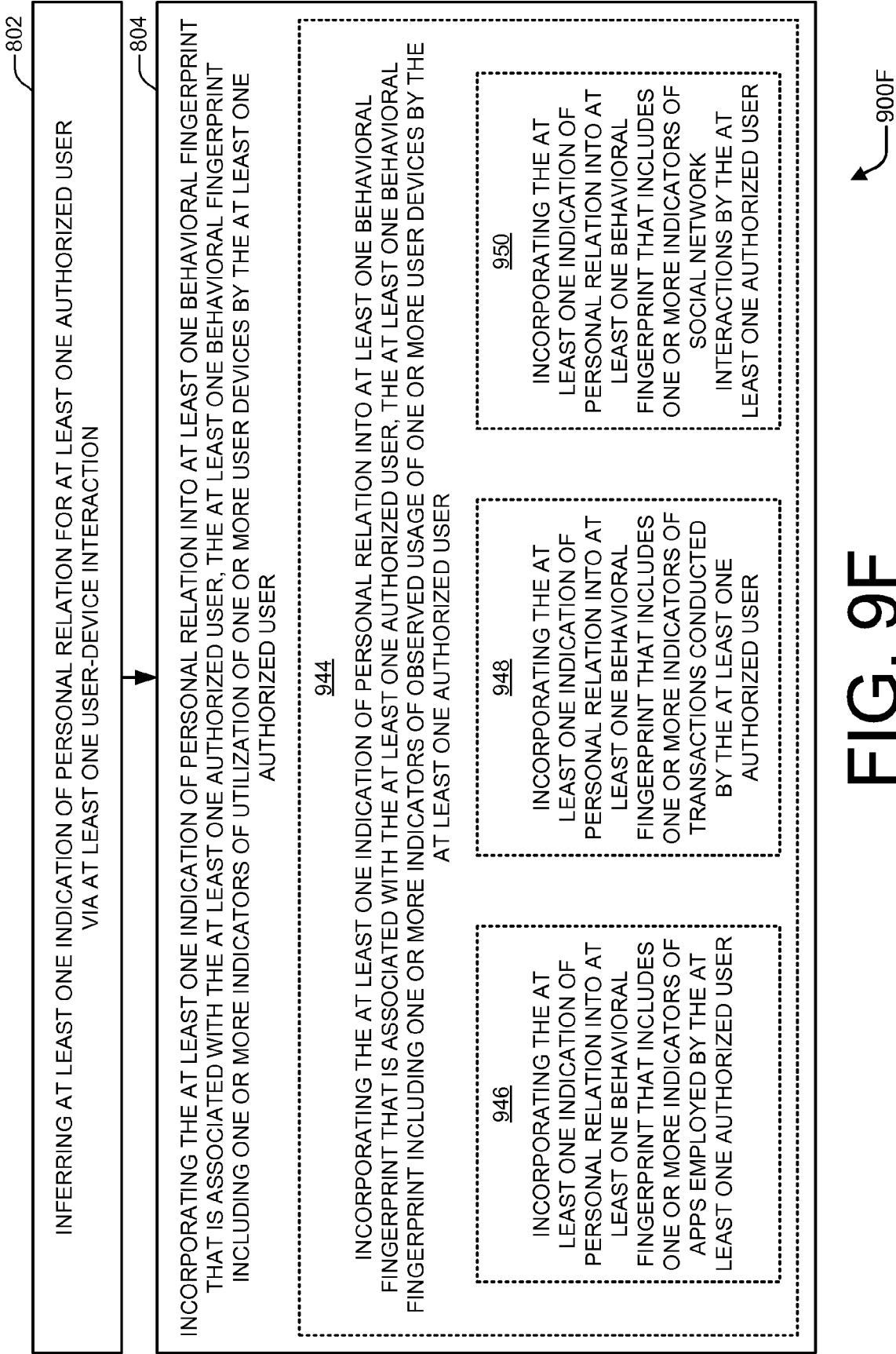


FIG. 9F

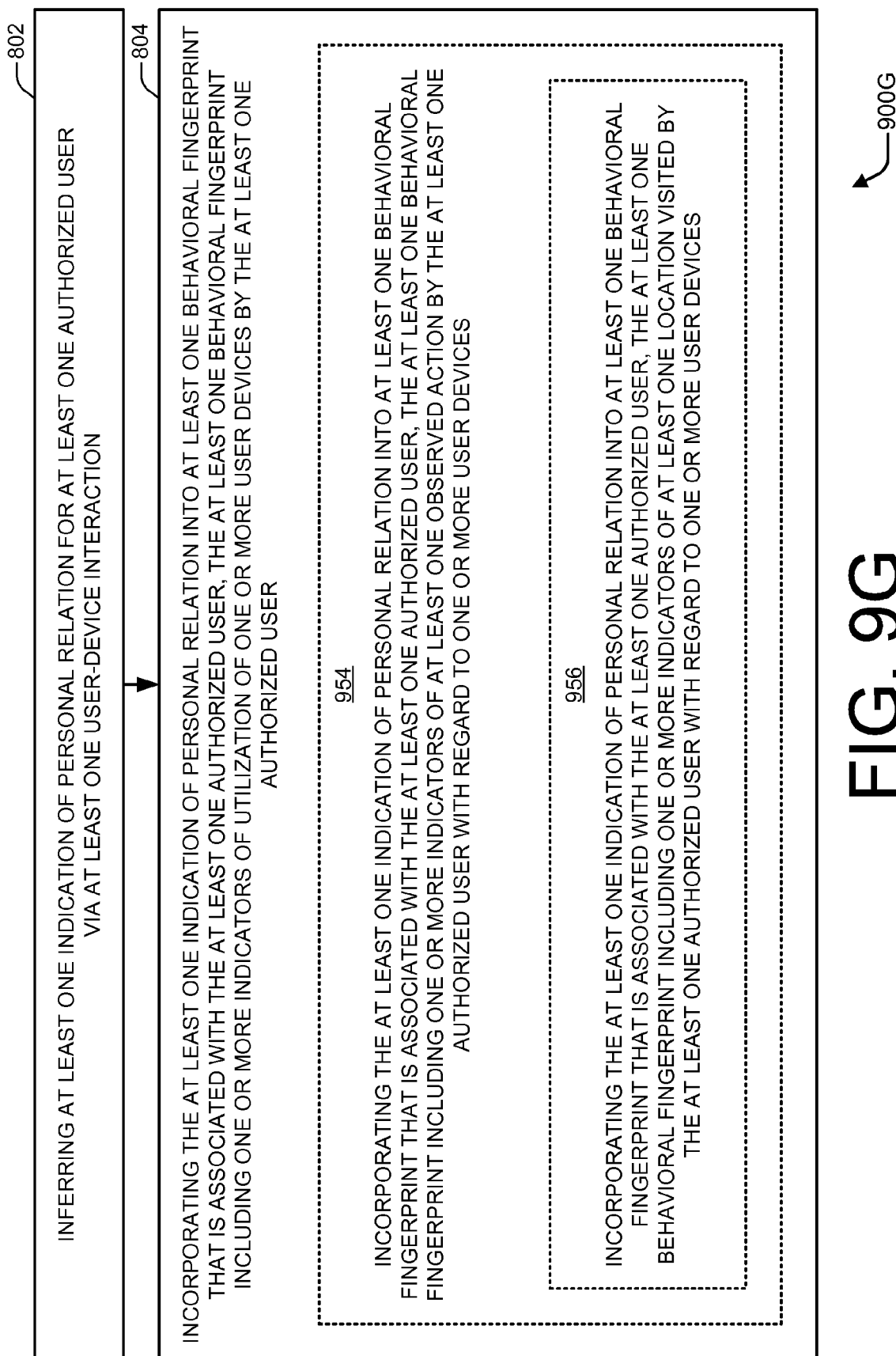


FIG. 9G

BEHAVIORAL FINGERPRINTING VIA INFERRED PERSONAL RELATION

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application is related to and/or claims the benefit of the earliest available effective filing date(s) from the following listed application(s) (the "Priority Applications"), if any, listed below (e.g., claims earliest available priority dates for other than provisional patent applications or claims benefits under 35 USC §119(e) for provisional patent applications, for any and all parent, grandparent, great-grandparent, etc. applications of the Priority Application(s)). In addition, the present application is related to the "Related Applications," if any, listed below.

PRIORITY APPLICATIONS

(1) For purposes of the USPTO extra-statutory requirements, the present application claims benefit of priority of U.S. Provisional Patent Application No. 61/632,836, entitled "Behavioral Fingerprint Based Authentication", naming Marc E. Davis, Matthew G. Dyor, Daniel A. Gerrity, Xuedong (XD) Huang, Roderick A. Hyde, Royce A. Levien, Richard T. Lord, Robert W. Lord, Mark A. Malamud, Nathan Myhrvold, and Clarence T. Tegreene as inventors, filed 24 Sep. 2011, which was filed within the twelve months preceding the filing date of the present application or is an application of which a currently co-pending application is entitled to the benefit of the filing date.

(2) For purposes of the USPTO extra-statutory requirements, the present application claims benefit of priority of U.S. Provisional Patent Application No. 61/572,309, entitled "Network Acquired Behavioral Fingerprint for Authentication", naming Marc E. Davis, Matthew G. Dyor, Daniel A. Gerrity, Xuedong (XD) Huang, Roderick A. Hyde, Royce A. Levien, Richard T. Lord, Robert W. Lord, Mark A. Malamud, Nathan Myhrvold, and Clarence T. Tegreene as inventors, filed 13 Oct. 2011, which was filed within the twelve months preceding the filing date of the present application or is an application of which a currently co-pending application is entitled to the benefit of the filing date.

(3) For purposes of the USPTO extra-statutory requirements, the present application constitutes a continuation-in-part of U.S. patent application Ser. No. 13/373,685, entitled "Behavioral Fingerprint Device Identification", naming Marc E. Davis, Matthew G. Dyor, Daniel A. Gerrity, Xuedong (XD) Huang, Roderick A. Hyde, Royce A. Levien, Richard T. Lord, Robert W. Lord, Mark A. Malamud, Nathan Myhrvold, and Clarence T. Tegreene as inventors, filed 23 Nov. 2011, which is currently co-pending or is an application of which a currently co-pending application is entitled to the benefit of the filing date.

(4) For purposes of the USPTO extra-statutory requirements, the present application constitutes a continuation-in-part of U.S. patent application Ser. No. 13/373,684, entitled "Behavioral Fingerprint Controlled Automatic Task Determination", naming Marc E. Davis, Matthew G. Dyor, Daniel A. Gerrity, Xuedong (XD) Huang, Roderick A. Hyde, Royce A. Levien, Richard T. Lord, Robert W. Lord, Mark A. Malamud, Nathan Myhrvold, and Clarence T. Tegreene as inventors, filed 23 Nov. 2011, which is currently co-pending or is an application of which a currently co-pending application is entitled to the benefit of the filing date.

(5) For purposes of the USPTO extra-statutory requirements, the present application constitutes a continuation-in-

part of U.S. patent application Ser. No. 13/373,680, entitled "Behavioral Fingerprint Controlled Theft Detection and Recovery", naming Marc E. Davis, Matthew G. Dyor, Daniel A. Gerrity, Xuedong (XD) Huang, Roderick A. Hyde, Royce A. Levien, Richard T. Lord, Robert W. Lord, Mark A. Malamud, Nathan Myhrvold, and Clarence T. Tegreene as inventors, filed 23 Nov. 2011, which is currently co-pending or is an application of which a currently co-pending application is entitled to the benefit of the filing date.

(6) For purposes of the USPTO extra-statutory requirements, the present application constitutes a continuation-in-part of U.S. patent application Ser. No. 13/373,677, entitled "Trust Verification Schema Based Transaction Authorization", naming Marc E. Davis, Matthew G. Dyor, Daniel A. Gerrity, Xuedong (XD) Huang, Roderick A. Hyde, Royce A. Levien, Richard T. Lord, Robert W. Lord, Mark A. Malamud, Nathan Myhrvold, and Clarence T. Tegreene as inventors, filed 23 Nov. 2011, which is currently co-pending or is an application of which a currently co-pending application is entitled to the benefit of the filing date.

(7) For purposes of the USPTO extra-statutory requirements, the present application constitutes a continuation-in-part of U.S. patent application Ser. No. 13/373,682, entitled "Social Network Based Trust Verification Schema", naming Marc E. Davis, Matthew G. Dyor, Daniel A. Gerrity, Xuedong (XD) Huang, Roderick A. Hyde, Royce A. Levien, Richard T. Lord, Robert W. Lord, Mark A. Malamud, Nathan Myhrvold, and Clarence T. Tegreene as inventors, filed 23 Nov. 2011, which is currently co-pending or is an application of which a currently co-pending application is entitled to the benefit of the filing date.

(8) For purposes of the USPTO extra-statutory requirements, the present application constitutes a continuation-in-part of U.S. patent application Ser. No. 13/475,564, entitled "Behavioral Fingerprint Based Authentication", naming Marc E. Davis, Matthew G. Dyor, Daniel A. Gerrity, Xuedong (XD) Huang, Roderick A. Hyde, Royce A. Levien, Richard T. Lord, Robert W. Lord, Mark A. Malamud, Nathan Myhrvold, and Clarence T. Tegreene as inventors, filed 18 May 2012, which is currently co-pending or is an application of which a currently co-pending application is entitled to the benefit of the filing date.

(9) For purposes of the USPTO extra-statutory requirements, the present application constitutes a continuation-in-part of U.S. patent application Ser. No. 13/538,385, entitled "Network Acquired Behavioral Fingerprint for Authentication", naming Marc E. Davis, Matthew G. Dyor, Daniel A. Gerrity, Xuedong (XD) Huang, Roderick A. Hyde, Royce A. Levien, Richard T. Lord, Robert W. Lord, Mark A. Malamud, Nathan Myhrvold, and Clarence T. Tegreene as inventors, filed 29 Jun. 2012, which is currently co-pending or is an application of which a currently co-pending application is entitled to the benefit of the filing date.

(10) For purposes of the USPTO extra-statutory requirements, the present application constitutes a continuation-in-part of U.S. patent application Ser. No. 13/552,502, entitled "Relationship Based Trust Verification Schema", naming Marc E. Davis, Matthew G. Dyor, Daniel A. Gerrity, Xuedong (XD) Huang, Roderick A. Hyde, Royce A. Levien, Richard T. Lord, Robert W. Lord, Mark A. Malamud, Nathan Myhrvold, and Clarence T. Tegreene as inventors, filed 18 Jul. 2012, which is currently co-pending or is an application of which a currently co-pending application is entitled to the benefit of the filing date.

(11) For purposes of the USPTO extra-statutory requirements, the present application constitutes a continuation-in-part of U.S. patent application Ser. No. 13/563,599, entitled

“Multi-Device Behavioral Fingerprinting”, naming Marc E. Davis, Matthew G. Dyor, Daniel A. Gerrity, Xuedong (XD) Huang, Roderick A. Hyde, Royce A. Levien, Richard T. Lord, Robert W. Lord, Mark A. Malamud, Nathan Myhrvold, and Clarence T. Tegreene as inventors, filed 31 Jul. 2012, which is currently co-pending or is an application of which a currently co-pending application is entitled to the benefit of the filing date.

(12) For purposes of the USPTO extra-statutory requirements, the present application constitutes a continuation-in-part of U.S. patent application Ser. No. 13/602,061, entitled “Behavioral Fingerprinting Via Social Networking Interaction”, naming Marc E. Davis, Matthew G. Dyor, Daniel A. Gerrity, Xuedong (XD) Huang, Roderick A. Hyde, Royce A. Levien, Richard T. Lord, Robert W. Lord, Mark A. Malamud, Nathan Myhrvold, and Clarence T. Tegreene as inventors, filed 31 Aug. 2012, which is currently co-pending or is an application of which a currently co-pending application is entitled to the benefit of the filing date.

(13) For purposes of the USPTO extra-statutory requirements, the present application constitutes a continuation-in-part of U.S. patent application Ser. No. 13/631,667, entitled “Behavioral Fingerprinting Via Derived Personal Relation”, naming Marc E. Davis, Matthew G. Dyor, Daniel A. Gerrity, Xuedong (XD) Huang, Roderick A. Hyde, Royce A. Levien, Richard T. Lord, Robert W. Lord, Mark A. Malamud, Nathan Myhrvold, and Clarence T. Tegreene as inventors, filed 28 Sep. 2012, which is currently co-pending or is an application of which a currently co-pending application is entitled to the benefit of the filing date.

RELATED APPLICATIONS

None

The United States Patent Office (USPTO) has published a notice to the effect that the USPTO’s computer programs require that patent applicants reference both a serial number and indicate whether an application is a continuation, continuation-in-part, or divisional of a parent application. Stephen G. Kunin, Benefit of Prior-Filed Application, USPTO Official Gazette Mar. 18, 2003. The USPTO further has provided forms for the Application Data Sheet which allow automatic loading of bibliographic data but which require identification of each application as a continuation, continuation-in-part, or divisional of a parent application. The present Applicant Entity (hereinafter “Applicant”) has provided above a specific reference to the application(s) from which priority is being claimed as recited by statute. Applicant understands that the statute is unambiguous in its specific reference language and does not require either a serial number or any characterization, such as “continuation” or “continuation-in-part,” for claiming priority to U.S. patent applications. Notwithstanding the foregoing, Applicant understands that the USPTO’s computer programs have certain data entry requirements, and hence Applicant has provided designation(s) of a relationship between the present application and its parent application(s) as set forth above, and in any ADS filed in this application, but expressly points out that such designations are not to be construed in any way as any type of commentary and/or admission as to whether or not the present application contains any new matter in addition to the matter of its parent application(s).

If the listings of applications provided above are inconsistent with the listings provided via an ADS, it is the intent of the Applicant to claim priority to each application that

appears in the Priority Applications section of the ADS and to each application that appears in the Priority Applications section of this application.

All subject matter of the Priority Applications and the Related Applications and of any and all parent, grandparent, great-grandparent, etc. applications of the Priority Applications and the Related Applications, including any priority claims, is incorporated herein by reference to the extent such subject matter is not inconsistent herewith.

BRIEF DESCRIPTION OF THE FIGURES

FIG. 1 is a schematic diagram of a user device, a server device, and at least one behavioral fingerprint, any of which may be involved individually or jointly in example authentication scenarios in accordance with certain example embodiments.

FIG. 2A is a schematic diagram of multiple user devices, multiple server devices, and at least one behavioral fingerprint, any of which may be involved individually or jointly in example authentication scenarios in accordance with certain example embodiments.

FIG. 2B is a schematic diagram of multiple user devices, multiple server devices, and multiple example locations for at least a portion of at least one behavioral fingerprint in accordance with certain example embodiments.

FIG. 3 is a schematic diagram illustrating an example behavioral fingerprint including one or more example indicators of one or more behavior-related acts in accordance with certain example embodiments.

FIG. 4 is a schematic diagram of an example user device including one or more example components in accordance with certain example embodiments.

FIG. 5 is a schematic diagram of an example server device including one or more example components in accordance with certain example embodiments.

FIGS. 6A and 6B are schematic diagrams of an example user device and an example server device, respectively, that have one or more functional units in accordance with certain example embodiments.

FIG. 7A is a schematic diagram that includes at least one example device that is capable of handling scenarios for behavioral fingerprinting via inferred personal relation in accordance with certain example embodiments.

FIGS. 7B-7D are schematic diagrams that include at least one example device and that depict example scenarios for implementing behavioral fingerprinting via inferred personal relation in accordance with certain example embodiments.

FIG. 8A is a flow diagram illustrating an example method for at least one device with regard to behavioral fingerprinting via inferred personal relation in accordance with certain example embodiments.

FIGS. 8B-8L depict example additions or alternatives for a flow diagram of FIG. 8A in accordance with certain example embodiments.

FIGS. 9A-9G depict example additions or alternatives for a flow diagram of FIG. 8A in accordance with certain example embodiments.

DETAILED DESCRIPTION

In the following detailed description, reference is made to the accompanying drawings, which form a part hereof. In the drawings, similar symbols typically identify similar components, unless context dictates otherwise. The illustrative embodiments described in the detailed description, drawings, and claims are not meant to be limiting. Other embodiments

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may be utilized, and other changes may be made, without departing from the spirit or scope of the subject matter presented here.

FIG. 1 is a schematic diagram **100** of a user device, a server device, and at least one behavioral fingerprint, any of which may be involved individually or jointly in example authentication scenarios in accordance with certain example embodiments. As shown in FIG. 1, by way of example but not limitation, schematic diagram **100** may include at least one user device **102**, at least one user **104**, at least one network **106**, at least one channel **108**, at least one behavioral fingerprint **110**, or at least one server device **112**. More specifically, at least one channel **108** may extend from or lead to a device **102** or **112** to facilitate communication therewith.

For certain example embodiments, a user **104** may correspond to or be utilizing at least one user device **102**. A user **104** may utilize a user device **102** in accordance with a usage that may be at least partially represented by, modeled by, incorporated into, stored at, tracked by, summarized in, a combination thereof, etc. at least one behavioral fingerprint **110**. A user device **102** may comprise, by way of example but not limitation, a mobile phone, a smart phone, a mobile terminal, a laptop or notebook computer, a personal digital assistant (PDA), a netbook, an entertainment appliance (e.g., a television, a gaming console, a set-top box, a music player, a combination thereof, etc.), a portable gaming device, a user equipment, a tablet or slate computer, a desktop computer, a personal navigation device (PND), a vehicle with user-accessible computational capabilities, videoconferencing equipment, some combination thereof, or so forth. A user **104** may comprise, by way of example only, at least one person, a couple, siblings, a family, a partnership, an organizational group, a company, a robotic user (e.g., a computational entity), an electronic agent, a portion thereof, some combination thereof, or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, a network **106** may comprise, by way of example but not limitation, at least a portion of one or more networks having one or more nodes that transmit, receive, forward, generate, buffer, store, route, switch, process, a combination thereof, etc. one or more messages, packets, signals, waves, voltage or current levels, some combination thereof, or so forth. A network may comprise, by way of example but not limitation, one or more of: a wireless network, a wired network, an internet, an intranet, a public network, a private network, a packet-switched network, a circuit-switched network, an ad hoc network, an infrastructure network, a public-switched telephone network (PSTN), a cable network, a cellular network, a satellite network, a fiber optic network, some combination thereof, or so forth. A node may comprise, by way of example but not limitation, a server; a router; an end user device, such as a mobile phone, a tablet computer, a desktop computer, an entertainment appliance, a vehicle, a combination thereof, etc.; a switch; a base station; a gateway; some combination thereof; or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, a channel **108** may comprise, by way of example but not limitation, one or more of: at least one wired link, at least one wireless link, at least part of public network, at least part of a private network, at least part of a packet-switched network, at least part of a circuit-switched network, at least part of an infrastructure network, at least part of an ad hoc network, at least part of a PSTN, at least part of a cable network, at least part of a cellular network connection, at least part of an Internet con-

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nection, at least part of a Wi-Fi connection, at least part of a WiMax connection, at least part of an internet backbone, at least part of a satellite network, at least part of a fiber optic network, multiple instances of any of the above, one or more network nodes, some combination of the above, or so forth. A channel **108** may include one or more nodes (e.g., a telecommunication node, an access point, a base station, an internet server, a gateway, an internet or telecommunications switch, a combination thereof, etc.) through which signals are propagated. A communication may comprise, by way of example but not limitation, a transmission of data, a reception of data, an exchange of data, a flow of data (e.g., between or among two or more intermediate nodes or endpoints), some combination thereof, or so forth. A user device **102** may communicate with a server device **112**, or vice versa, via one or more signals (not explicitly shown) using one or more channels **108**. A couple of examples of channels **108** are illustrated in schematic diagram **100** (as well as in additional figures, such as schematic diagram **200A** of FIG. 2A). Signals may propagate via one or more channels **108**. Signals, by way of example but not limitation, may comprise, electrical signals, magnetic signals, electromagnetic signals, photonic signals, wireless signals, wired signals, multiples ones thereof, some combination thereof, or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, a server device **112** may comprise, by way of example but not limitation, one or more of: a stand-alone server, a server blade, a server rack, a bank of servers, a server farm, hardware supporting a part of a cloud service or system, a home server, hardware running a virtualized server, one or more processors executing code to function as a server, one or more machines performing server-side functionality as described herein, at least a portion of any of the above, some combination thereof, or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, at least one behavioral fingerprint **110** may comprise, by way of example but not limitation, one or more indicators representing one or more behaviors of at least one user with respect to at least one user device. Examples of one or more indicators representing one or more behaviors of at least one user with respect to at least one user device may include, but are not limited to, one or more indicators representing one or more habits of at least one user with respect to at least one user device, one or more indicators representing usage of at least one user device by at least one user, one or more indicators representing one or more actions of at least one user with respect to at least one user device, some combination thereof, or so forth. Additionally or alternatively, at least one behavioral fingerprint **110** may comprise, by way of example but not limitation, one or more indicators representing one or more predicted acts (e.g., behaviors, such as habits, usages, actions, a combination thereof, etc.) of at least one user with respect to at least one device. Additionally or alternatively, at least one behavioral fingerprint **110** may comprise, by way of example but not limitation, at least one status of a user that is utilizing or that corresponds to a user device. For certain example implementations, a user whose behavior is being monitored to at least partially establish at least a portion of at least one behavioral fingerprint **110** may comprise an authorized user, which is described herein below. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, a user may be utilizing a user device, by way of example but not limitation, if the user

is accessing the user device, if the user is interacting with the user device, if the user is carrying the user device, if the user is providing input to the user device, if the user is receiving output from the user device, if the user is directing operation of the user device, some combination thereof, or so forth. A user may correspond to a user device, by way of example but not limitation, if the user is an authorized user of the user device. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, a user **104** of a user device **102** may comprise an authorized user of the user device **102**: if the user **104** comprises, by way of example but not limitation, a true owner, a manager, an information technology (IT) specialist, a controller, a purchaser, a lessee, an approved borrower, a primary user, a combination thereof, etc. of the user device **102**; if the user **104** is or has been authorized by a true owner, a manager, an IT specialist, a controller, a purchaser, a lessee, an approved borrower, a primary user, a combination thereof, etc. of the user device **102**; some combination thereof; or so forth. In certain example implementations, a determination that a user **104** comprises (e.g., is, is becoming, is being designated, a combination thereof, etc.) an authorized user of a user device **102**: may be effectuated if or when a user first registers a profile, an account, a combination thereof, etc. on a device (e.g., after a purchase or a 'hard' reset); may be effectuated if or when one or more 'sign-ins' (e.g., entry of a password, code, PIN, pattern, biometric input, a combination thereof, etc.) are performed by a user; may be effectuated if or when one or more user ID/secret information combinations (e.g., entry of an account name, email address, individualized identification, a combination thereof, etc. along with a corresponding password, code, PIN, pattern, biometric input, a combination thereof, etc.) are entered by a user; may be effectuated if or when a given user is identified as, designated as, or otherwise indicated to comprise an authorized user by one who is already an authorized user; some combination of such authorized user determinations; or so forth. An authorized user may add a new authorized user, by way of example only: by providing a name or other identification of another user or his or her biometric information (e.g., a facial photo, a voice sample, a fingerprint image, a retinal scan, a combination thereof, etc.); by providing a name or other identification of a user or temporary or permanent secret information, such as a password, a code, a PIN, a pattern, biometric input, a combination thereof, etc. (e.g., that a newly authorized user may be capable of changing or confirming); some combination thereof; or so forth. An authorized user, such as a true owner or IT specialist, may be empowered to remove someone from a list of authorized user(s). In certain example embodiments, different authorized users may have different levels of authorization (e.g., different levels of access, capabilities, rights, privileges, a combination thereof, etc.) with respect to a given user device **102**. For certain example implementations, but by way of example only, one authorized user may comprise an administrator with full access rights or privileges, yet another authorized user may comprise a regular, non-administrative, or junior user with fewer access rights or privileges. Additionally or alternatively, one authorized user may have full access rights to applications and content stored on a device or associated with a particular account/profile, yet another authorized user may have restricted access rights to applications or content stored on a device such that access is prevented, for instance, to particular device settings or adult content. Other approaches to providing different levels of authorization may also or instead be implemented. By way of

example only, an authorized user who is a true owner may add a new authorized user that is permitted to utilize existing applications and content but is prohibited from adding new applications or making particular purchases (e.g., individual purchases above a predetermined dollar amount or multiple purchases beyond a total dollar amount).

FIG. 2A is a schematic diagram **200A** of multiple user devices, multiple server devices, and at least one behavioral fingerprint, any of which may be involved individually or jointly in example authentication scenarios in accordance with certain example embodiments. As shown in FIG. 2A, by way of example but not limitation, schematic diagram **200A** may include at least one user device **102**, at least one user **104**, at least one network **106**, at least one channel **108**, at least one behavioral fingerprint **110**, or at least one server device **112**. More specifically, schematic diagram **200A** may include, by way of example only, three user devices **102** (e.g., a user device **102A**, a user device **102B**, or a user device **102C**, etc.), two server devices **112** (e.g., a server device **112A**, or a server device **112B**, etc.), or two behavioral fingerprints **110** (e.g., a behavioral fingerprint **110a**, or a behavioral fingerprint **110b**, etc.).

For certain example embodiments, a user **104** may correspond to or be utilizing multiple user devices **102**, such as at least two of user device **102A**, user device **102B**, or user device **102C**, at least partially simultaneously or from time to time. By way of example only, a user **104** may own at least two of: a mobile phone, a tablet computer, a vehicle with an intelligent computing apparatus, a laptop computer, or a desktop computer. For certain example implementations, at least part of a combined behavioral fingerprint **110** (e.g., a behavioral fingerprint **110a/110b**) may be associated with a user **104** and each corresponding user device **102**. Additionally or alternatively, an individualized behavioral fingerprint **110** (e.g., a behavioral fingerprint **110a** or a behavioral fingerprint **110b**) may be associated with a user **104** and each corresponding individual or respective user device **102**. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, a behavioral fingerprint **110**, **110a**, or **110b**; an at least partially combined instantiation of at least two of a behavioral fingerprint **110**, **110a**, or **110b**; a portion of a behavioral fingerprint **110**, **110a**, or **110b**; a combination thereof; etc. may be distributed across or stored at, by way of example only, one or more of: a user device **102A**, a user device **102B**, a user device **102C**, a network **106** or node thereof, a server device **112A**, a server device **112B**, some combination thereof, or so forth. Additionally or alternatively, a behavioral fingerprint **110**, **110a**, or **110b**; an at least partially combined instantiation of at least two of a behavioral fingerprint **110**, **110a**, or **110b**; a portion of a behavioral fingerprint **110**, **110a**, or **110b**; a combination thereof; etc. may be transmitted, received, exchanged, a combination thereof, etc., by way of example only, via one or more of: at least one network **106**, one or more channels **108**, some combination thereof, or so forth. A user device **102** or a server device **112** may transmit, receive, exchange, a combination thereof, etc. at least a portion of a behavioral fingerprint **110**, **110a**, or **110b** directly between or among devices **102** or **112** or indirectly via at least one node (not explicitly shown) of one or more networks **106**. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 2B is a schematic diagram **200B** of multiple user devices, multiple server devices, and multiple example locations for at least a portion of at least one behavioral fingerprint in accordance with certain example embodiments. As shown

in FIG. 2B, by way of example but not limitation, schematic diagram 200B may include at least one user device 102, at least one user 104, at least one network 106, at least one channel 108, at least one behavioral fingerprint 110, or at least one server device 112. More specifically, schematic diagram 200B may include, by way of example only, three user devices 102 (e.g., a user device 102A, a user device 102B, or a user device 102C, etc.), two server devices 112 (e.g., a server device 112A, or a server device 112B, etc.), or six behavioral fingerprints 110 (e.g., a behavioral fingerprint 110c, a behavioral fingerprint 110d, a behavioral fingerprint 110e, a behavioral fingerprint 110f, a behavioral fingerprint 110g, or a behavioral fingerprint 110h, etc.).

For certain example embodiments, a given behavioral fingerprint 110 or portion thereof may be located at (stored at, distributed at least partially across, accessible from, associated with, a combination thereof, etc.) one or more devices 102 or 112. By way of example only, a behavioral fingerprint 110c may be located at a user device 102A, a behavioral fingerprint 110d may be located at a user device 102B, a behavioral fingerprint 110e may be located at a user device 102C, a behavioral fingerprint 110f may be located at a network 106 (e.g., at a cloud service or system), a behavioral fingerprint 110g may be located at a server device 112A, or a behavioral fingerprint 110h may be located at a server device 112B. For certain example implementations, any one or more of behavioral fingerprints 110c-110h may comprise one or more separate or individualized behavioral fingerprints 110; may comprise one or more combined, amalgamated, distributed, a combination thereof, etc. behavioral fingerprints 110; may comprise at least a portion of at least one behavioral fingerprint 110; some combination thereof; or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, at least one behavioral fingerprint 110 (e.g., of behavioral fingerprints 110c-110h) may be associated with at least one user 104 or one or more of user devices 102A, 102B, or 102C. For certain example implementations, a behavioral fingerprint 110c, which may be stored at a user device 102A, may be associated with a user 104 and user device 102A. For certain example implementations, a behavioral fingerprint 110g, which may be stored at a server device 112A, may be associated with a user 104 and a user device 102A. For certain example implementations, a behavioral fingerprint 110h, which may be stored at a server device 112B, may be associated with a user 104, a user device 102B, and a user device 102C. For certain example implementations, a behavioral fingerprint 110c, which may be stored at a user device 102A and associated therewith, and a behavioral fingerprint 110d, which may be stored at a user device 102B and associated therewith, may be individually or jointly associated with a user 104. A behavioral fingerprint 110c and a behavioral fingerprint 110d may be identical to each other, partially the same, different from one another, updated to keep one at least partially coherent or consistent with the other, some combination thereof, or so forth. For certain example implementations, a behavioral fingerprint 110d, which may be stored at a user device 102B and associated therewith, and a behavioral fingerprint 110g, which may be stored at a server device 112A and associated with a user device 102C, may be individually or jointly associated with a user 104. A behavioral fingerprint 110d and a behavioral fingerprint 110g may be identical to each other, partially the same, different from one another, updated to keep one at least partially coherent or consistent with the other, some combination thereof, or so forth. For certain example implementations, a behavioral fingerprint 110e, which may be stored at a

user device 102C and associated therewith, and a behavioral fingerprint 110h, which may be stored at a server device 112B and also associated with user device 102C, may be individually or jointly associated with a user 104. A behavioral fingerprint 110e and a behavioral fingerprint 110h may be identical to each other, partially the same, different from one another, updated to keep one at least partially coherent or consistent with the other, some combination thereof, or so forth. For certain example implementations, a behavioral fingerprint 110e, which may be stored at a user device 102C, may be associated with a user 104 and a user device 102B. Although each user device 102 and server device 112 (and network 106) is shown in schematic diagram 200B as having a behavioral fingerprint 110 located there at, one or more user devices 102 or server devices 112 (or networks 106) may alternatively not have a behavioral fingerprint 110 located there at. Furthermore, other additional or alternative approaches may instead be implemented.

For certain example embodiments, a behavioral fingerprint 110 (including but not limited to any one or more of behavioral fingerprints 110a-110h) may comprise a whole behavioral fingerprint, a portion of a behavioral fingerprint, a behavioral fingerprint associated with a single user device, a behavioral fingerprint associated with multiple user devices, a part of a distributed behavioral fingerprint, a whole behavioral fingerprint that is distributed across multiple devices, a portion or a whole behavioral fingerprint that is located at one device, one or more indicators of one or more behavior-related acts, some combination thereof, or so forth. Examples of behavioral fingerprint(s) 110 are described further herein below with particular reference to FIG. 3. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 3 is a schematic diagram 300 illustrating an example behavioral fingerprint including one or more example indicators of one or more behavior-related acts in accordance with certain example embodiments. As shown in FIG. 3, by way of example but not limitation, schematic diagram 300 may comprise a behavioral fingerprint 110, which behavioral fingerprint 110 may include any one or more of indications of various acts 302-322 or other indications 324. Example indications 302-324 that are illustrated may include, but are not limited to, user interface actions 302, user movements 304, locations visited 306, social network interactions 308, communication modes employed 310, entity interactions 312, apps employed 314, transactions conducted 316, user statuses 318, other acts 320, predicted acts 322, other indications or indicators 324, some combination thereof, or so forth. More specifically, locations visited 306 may include physical locations visited 306a, virtual locations visited 306b, a combination thereof, etc., or social network interactions 308 may include social network members 308a, social network messages 308b, a combination thereof, etc. Additional or alternative implementations to those of schematic diagram 300 for a behavioral fingerprint 110 are described further herein below as well as above. Moreover, a behavioral fingerprint 110 may alternatively include more, fewer, or different indication(s) from those that are illustrated without departing from claimed subject matter.

For certain example embodiments, one or more user interface actions 302 may include, but are not limited to, a type of user interaction (e.g., buttons, keys, physical keyboard, touch screen, swipes, virtual buttons, virtual keyboard, multi-finger touch, speech, textual, movement sensing input such as a shake or a twist, a combination thereof, etc.), a speed of user interaction (e.g., speech rate, speech cadence, typing speed, swiping speed, scrolling speed, speed moving between or

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among windows or apps, duration of a swipe or press of a virtual or physical key or button, a combination thereof, etc.), a user input apparatus (e.g., a built-in microphone, a wireless microphone, a built-in keyboard, a virtual keyboard, a detachable/attachable keyboard, a wireless keyboard, an input apparatus identifiable such as by name or number, a combination thereof, etc.), a position of user interaction (e.g., a location of touch for a touch-sensitive screen having a keyboard or button or swipe area, a location of a swipe, a length of a swipe, an offset from a designated key or slide area, a combination thereof, etc.), a user output apparatus (e.g., a screen, a built-in speaker, a separate speaker, a vibration unit, an integrated output apparatus, a wired output apparatus, a wireless output apparatus, an output apparatus identifiable such as by name or number, a combination thereof, etc.), some combination thereof, or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, one or more user movements **304** may include, but are not limited to, device orientation (e.g., cardinal direction a device is pointed at, angle a device is held at, a combination thereof, etc.), device shakes or deformations (e.g., how a device is moved to provide input, how a device is pressed or twisted or curved to provide input, a combination thereof, etc.), a pattern of vibrations or jostling applied to or experienced by a device during daily use (e.g., as a result of carrying it, commuting with it, placing it in a pack or purse, placing it in a pocket, a combination thereof, etc.), some combination thereof, or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, one or more locations visited **306** may include, but are not limited to, locations that a user carries, sends, places, or travels with a device; locations that a user directs software to acquire data from or send data to; some combination thereof; or so forth. For certain example implementations, physical locations visited **306a** may include, but are not limited to, an address, a room, a store, a building, a neighborhood, a city, a state, a country, one or more satellite positioning system (SPS) coordinates, a check-in location, a business, one or more geographical (e.g., cardinal) coordinates, a geographical zone (e.g., coordinates or approximate position in conjunction with a distance or range), some combination thereof, or so forth. For certain example implementations, virtual locations visited **306b** may include, but are not limited to, an internet address, a web page, a web site, a social network, a destination within a social network, a virtual world, a destination within a virtual world, a chat room, a bulletin board, a blog, some combination thereof, or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, one or more social network interactions **308** may include, but are not limited to, accessing a social network, reading a communication from one or more social network members, sending a communication to one or more social network members, changing profile or account information for a social network, viewing publicly-available social network information (e.g., viewing a person's wall, board, stream, pinning, a combination thereof, etc.), viewing private social network information (e.g., viewing a targeted or personalized message, tweet, picture, a combination thereof, etc.), searching for entities on a social network, playing games via a social network, experiencing entertainment (e.g., video, audio, clips, pictures, a combination thereof, etc.) via a social network, a listing of which social network(s) are accessed, an order of which social net-

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works are accessed, a day or time of accessing particular social network(s), some combination thereof, or so forth. For certain example implementations, social network member interactions **308a** may include, but are not limited to, identifying or listing members interacted with via receiving, retrieving, sending, replying to a combination thereof, etc. one or more communications; noting particular social network protocols or modes (e.g., wall writing or viewing, tweet sending or receiving, picture sending or viewing, public versus private communicating, a combination thereof, etc.) used to communicate with particular members individually or in groups; noting particular social network protocols or modes used to communicate with particular member groups; some combination thereof; or so forth. For certain example implementations, social network message interactions **308b** may include, but are not limited to, noting (e.g., recording, memorializing, storing, identifying, a combination thereof, etc.) messages sent or received, noting an order of message sending or viewing, noting a type (e.g., a social network protocol) of message sent or received, noting a number of messages sent or received, noting a duration between arrival of a message (e.g., generally or from a particular member) and viewing of the message, noting a duration between arrival or viewing of a message (e.g., generally or from a particular member) and responding to the message, some combination thereof, or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, one or more communication modes employed **310** may include, but are not limited to, speech, a phone call, a voice-over-internet-protocol (VoIP) communication, text messaging, instant messaging, a video communication (e.g., a video call, a video conference, a combination thereof, etc.), a social-network-based communication (e.g., a communication that is effectuated at least partially using a social network app, web site, service, a combination thereof, etc.), some combination thereof, or so forth. Additionally or alternatively, one or more communication modes employed **310** may include, but are not limited to, indications of which communication mode is employed if/when responding to a received communication of a given communication mode (e.g., it may be noted that an authorized user may respond to most phone calls or phone calls from particular people with text messages). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, one or more entity interactions **312** may include, but are not limited to, identification of at least one entity (e.g., business, service, person, social network member, group, organization, a combination thereof, etc.) that a user interacts with (e.g., with or without an indication of a communication mode, such as via a telephone capability, via email, via instant messaging, via a social network communication protocol, via VoIP, via a video capability, via a speech capability, a combination thereof, etc.), a listing of entities interacted with, an order of entities interacted with, notations of when (e.g., a day, a time, days of week, a combination thereof, etc.) entities are interacted with, notations of how (e.g., a communication mode used, a duration, a combination thereof, etc.) entities are interacted with, some combination thereof, or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, one or more apps employed **314** may include, but are not limited to, identification of one or more apps (e.g., applications, native applications, downloaded applications, installed applications, soft-

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ware applications, web applications, a combination thereof, etc.) employed (e.g., accessed, started, opened, launched, viewed, consulted, manipulated, configured, installed, executed, a combination thereof, etc.) by a user, a listing of apps employed, an order of apps employed, a notation of a time or a day at which apps are employed, a notation of duration(s) for which apps are employed, some combination thereof, or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, one or more transactions conducted **316** may include, but are not limited to, an identification of transactions (e.g., exchanges of consideration, purchases, orders, downloads, a combination thereof, etc.) conducted (e.g., initiated, requested, consummated, effectuated, accomplished, monitored, a combination thereof, etc.), a list of transactions, a notation of times or days of transactions, a notation of transaction amounts, a notation of at least one party to one or more transactions, a notation of items (e.g., physical items such as food or electronics, virtual items such as songs or movies or games or in-game abilities, a combination thereof, etc.) or services (e.g., physical services such as a massage or a car wash, virtual services such as streaming media or a membership, a combination thereof, etc.) involved in one or more transactions, some combination thereof, or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, one or more user statuses **318** may include, but are not limited to, a location status update, a health status update, an alert (e.g., as to whether a person has possession or has lost possession of a device; as to whether a device has exceeded some percentage—e.g. 50% or 75% or 100%—of an allotted amount, such as of minutes of talking, bytes of data, messages of texting, dollars of a fund, time of use, etc.; as to where a person is currently located; a combination thereof; etc.), a current (e.g., most recent, present, a combination thereof, etc.) activity update, some combination thereof, or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, one or more other acts **320** may include, but are not limited to, other user behaviors, user habits, user actions, user movements, user interactions, user visitations, user transactions, device features (e.g., capabilities, native applications, operating system functions, a combination thereof, etc.) employed, a combination thereof, etc. that a device may monitor (e.g., detect, observe, discern, ascertain, a combination thereof, etc.); other acts reflecting user behavior; other acts described herein; some combination thereof; or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, one or more predicted acts **322** may include, but are not limited to, an act that is predicted based at least partially on any one or more of other indications **302-320**; an act that is predicted to be performed by an authorized user; an act corresponding to a particular likelihood level of re-occurring; an act that is predicted to re-occur in view of one or more observed acts of at least one authorized user of one or more user devices; an act that is predicted to occur based at least partially on a statistical analysis (e.g., a likelihood function, a histogram evaluation, a probabilistic approach, a Bayesian analysis, a stochastic mechanism, a correlation procedure, a probability density function, a normal/Gaussian distribution, a cumulative distribution function, an expected value, a combination thereof,

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etc.) of one or more historically-monitored acts; an act that has been repeatedly performed in certain manner(s) or at particular time(s) such that it can be expected to be performed again in such certain manner(s) or at such particular time(s); an act that is derived or results from a conversion of monitored act(s) corresponding to one device to at least one act corresponding to another device; some combination thereof; or so forth. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, one or more other indications **324** may include, but are not limited to, static characteristics of an authorized user, individuals that are related to an authorized user, characteristics of individuals that are related to an authorized user; nature of relationships between or among an authorized user and other individuals, some combination thereof, or so forth. Non-exhaustive examples of other indications or indicators **324** are provided herein below with particular reference to FIGS. **7A-7C**, **8A-8M**, and **9A-9G**. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. **4** is a schematic diagram **400** of an example user device including one or more example components in accordance with certain example embodiments. As shown in FIG. **4**, a user device **102** may include one or more components such as: at least one processor **402**, one or more media **404**, logic **406**, circuitry **408**, at least one communication interface **410**, at least one interconnect **412**, at least one power source **414**, at least one user interface **416**, one or more sensors **418**, some combination thereof, or so forth. Furthermore, as shown in schematic diagram **400**, one or more media **404** may comprise one or more instructions **420**, at least one behavioral fingerprint **110**, one or more settings or parameters **422**, some combination thereof, or so forth; a communication interface **410** may comprise at least one wireless communication interface **410a**, at least one wired communication interface **410b**, some combination thereof, or so forth; or a user interface **416** may comprise at least one user input interface **416a**, at least one user output interface **416b**, some combination thereof, or so forth. However, a user device **102** may alternatively include more, fewer, or different component(s) from those that are illustrated without departing from claimed subject matter.

For certain example embodiments, a user device **102** may include or comprise at least one electronic device. User device **102** may comprise, for example, a computing platform or any electronic device having at least one processor or memory. Processor **402** may comprise, by way of example but not limitation, any one or more of a general-purpose processor, a specific-purpose processor, a digital signal processor (DSP), a processing unit, some combination thereof, or so forth. A processing unit may be implemented, for example, with one or more application specific integrated circuits (ASICs), DSPs, digital signal processing devices (DSPDs), programmable logic devices (PLDs), field programmable gate arrays (FPGAs), processors generally, processing cores, discrete/fix logic circuitry, controllers, micro-controllers, microprocessors, some combination thereof, or so forth. Media **404** may bear, store, contain, include, provide access to, a combination thereof, etc. instructions **420**, which may be executable by a processor **402**; at least one behavioral fingerprint **110**; one or more settings/parameters **422**; some combination thereof; or so forth. Instructions **420** may comprise, by way of example but not limitation, a program, a module, an application or app (e.g., that is native, that runs in a browser, that runs within a virtual machine, a combination thereof,

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etc.), an operating system, a combination thereof, etc. or portion thereof; operational data structures; source code, object code, just-in-time (JIT) compiled code, a combination thereof, etc.; processor-executable instructions; other code; some combination thereof; or so forth. Media **404** may comprise, by way of example but not limitation, processor-accessible or non-transitory media (e.g., memory, random access memory (RAM), read only memory (ROM), flash memory, hard drives, disk-based media, disc-based media, magnetic storage, optical storage, volatile memory, nonvolatile memory, a combination thereof, etc.) that is capable of bearing instructions, a behavioral fingerprint, settings, parameters, some combination thereof, or so forth.

For certain example embodiments, execution of instructions **420** by one or more processors **402** may transform user device **102** into a special-purpose computing device, apparatus, platform, machine, some combination thereof, or so forth. Instructions **420** may comprise, for example, instructions that are capable of realizing at least a portion of one or more flow diagrams, methods, processes, procedures, operations, functionality, technology, mechanisms, a combination thereof, etc. that are described herein or illustrated in the accompanying drawings. Settings/parameters **422** may comprise, by way of example but not limitation, one or more settings or parameters that may be established or determined by a user or other entity, one or more settings or parameters that may be determined or detected by a user device **102**, one or more settings or parameters that may be received from another device that determined or detected them, one or more settings or parameters that may determine at least partly how a user device **102** is to operate or respond to a situation or a behavioral fingerprint, one or more settings or parameters (e.g., values) that may be used to realize flow diagrams, methods, processes, procedures, operations, functionality, technology, mechanisms, a combination thereof, etc. that are described herein or illustrated in the accompanying drawings. Settings/parameters **422** may control at least partially how at least one behavioral fingerprint **110** is configured, stored, shared, used, applied, some combination thereof, or so forth. Additionally or alternatively, at least a portion of settings/parameters **422** may be at least partially integrated with at least one behavioral fingerprint **110**.

For certain example embodiments, logic **406** may comprise hardware, software, firmware, discrete/fixed logic circuitry, a combination thereof, etc. that is capable of performing or facilitating performance of flow diagrams, methods, processes, procedures, operations, functionality, technology, mechanisms, a combination thereof, etc. that are described herein or illustrated in the accompanying drawings. Circuitry **408** may comprise hardware, software, firmware, discrete/fixed logic circuitry, a combination thereof, etc. that is capable of performing or facilitating performance of flow diagrams, methods, processes, procedures, operations, functionality, technology, mechanisms, a combination thereof, etc. that are described herein or illustrated in the accompanying drawings, wherein circuitry **408** comprises at least one physical or hardware component or aspect.

For certain example embodiments, one or more communication interfaces **410** may provide one or more interfaces between user device **102** and another device or a person/operator. With respect to a person/operator, a communication interface **410** may include, by way of example but not limitation, a screen, a speaker, a keyboard or keys, a microphone, or other person-device input/output apparatuses. A wireless communication interface **410a** or a wired communication interface **410b** may also or alternatively include, by way of example but not limitation, a transceiver (e.g., a transmitter or

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a receiver), a radio, an antenna, a wired interface connector or other similar apparatus (e.g., a network connector, a universal serial bus (USB) connector, a proprietary connector, a Thunderbolt® or Light Peak® connector, a combination thereof, etc.), a physical or logical network adapter or port, a frequency converter, a baseband processor, a combination thereof, etc. to communicate wireless signals or wired signals via one or more wireless communication links or wired communication links, respectively, such as over at least one channel **108** (e.g., of FIGS. **1** and **2A**). Communications with at least one communication interface **410** may enable transmitting, receiving, or initiating of transmissions, just to name a few examples.

For certain example embodiments, at least one interconnect **412** may enable signal communication between or among components of user device **102**. Interconnect **412** may comprise, by way of example but not limitation, one or more buses, channels, switching fabrics, some combination thereof, or so forth. Although not explicitly illustrated in FIG. **4**, one or more components of user device **102** may be coupled to interconnect **412** via a discrete or integrated interface. By way of example only, one or more interfaces may couple a communication interface **410** or a processor **402** to at least one interconnect **412**. For certain example embodiments, at least one power source **414** may provide power to one or more components of user device **102**. Power source **414** may comprise, by way of example but not limitation, a battery, a power connector, a solar power source or charger, a mechanical power source or charger, a fuel source, some combination thereof, or so forth.

For certain example embodiments, at least one sensor **418** may sense, produce, or otherwise provide at least one sensor value. Sensors **418** may include, by way of example only, a camera, a microphone, an accelerometer, a thermometer, a satellite positioning system (SPS) sensor, a barometer, a humidity sensor, a compass, a gyroscope, a magnetometer, a pressure sensor, an oscillation detector, a light sensor, an inertial measurement unit (IMU), a tactile sensor, a touch sensor, a flexibility sensor, a microelectromechanical system (MEMS), some combination thereof, or so forth. Values provided by at least one sensor **418** may comprise, by way of example but not limitation, an image, a sound recording, an acceleration value, a temperature, SPS coordinates, a barometric pressure, a humidity level, a compass direction, a gyroscopic value, a magnetic reading, a pressure value, an oscillation value, an ambient light reading, inertial readings, touch detections, finger placements, flex detections, some combination thereof, or so forth.

For certain example embodiments, a user interface **416** may enable one or more users to interact with user device **102**. Interactions between a user and a user device may relate, by way of example but not limitation: to touch/tactile/feeling/haptic sensory (e.g., a user may shake, rotate, decline/incline, bend, twist, or move a user device which may be detected by a gyroscope, an accelerometer, a compass, a combination thereof, etc.); a user may press a button, slide a switch, rotate a knob, etc.; a user may touch a touch-sensitive screen; a device may vibrate; some combination thereof; or so forth); to sound/hearing/speech sensory (e.g., a user may speak into a microphone, a device may generate sounds via a speaker, a combination thereof, etc.); to sights/vision sensory (e.g., a device may activate one or more lights, modify an image presented on a display screen, a combination thereof, etc.); some combination thereof, or so forth.

For certain example embodiments, a user interface **416** may comprise a user input interface **416a**, a user output interface **416b**, some combination thereof, or so forth. A user

input interface **416a** may comprise, by way of example but not limitation, a microphone, a button, a switch, a dial, a knob, a wheel, a trackball, a key, a keypad, a keyboard, a touch-sensitive screen, a touch-sensitive surface, a camera, a gyroscope, an accelerometer, a compass, a virtual button/slider/keyboard/etc. presented on a touch-sensitive screen, some combination thereof, or so forth. A user output interface **416b** may comprise, by way of example but not limitation, a speaker, a screen (e.g., with or without touch-sensitivity), a vibrating haptic feature, some combination thereof, or so forth. Certain user interfaces **416** may enable both user input and user output. For example, a touch-sensitive screen may be capable of providing user output and accepting user input. Additionally or alternatively, a user interface **416** component (e.g., that may be integrated with or separate from a user device **102**), such as a headset that has a microphone and a speaker, may enable both user input and user output.

However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, or so forth. For instance, it should be understood that for certain example implementations components that are illustrated separately in FIG. 4 may not necessarily be separate or mutually exclusive. For example, a given component may provide multiple functionalities. By way of example only, a single component such as a USB connector may function as a wired communication interface **410b** or a power source **414**. Additionally or alternatively, a single component such as a display screen may function as a communication interface **410** with respect to a user, as a user input interface **416a**, or as a user output interface **416b**. Additionally or alternatively, one or more instructions **420** may function to realize at least part of a behavioral fingerprint **110** or at least one setting or parameter **422**.

It should also be understood that for certain example implementations components that are illustrated in schematic diagram **400** or described herein may or may not be integral with or integrated into a user device **102**. For example, a component may be removably connected to a user device **102**, a component may be wirelessly coupled to a user device **102**, some combination thereof, or so forth. By way of example only, instructions **420** may be stored on a removable card having at least one medium **404**. Additionally or alternatively, a user interface **416** (e.g., a wired or wireless headset, a screen, a video camera, a keyboard, a combination thereof, etc.) may be coupled to a user device **102** wirelessly or by wire. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 5 is a schematic diagram **500** of an example server device including one or more example components in accordance with certain example embodiments. As shown in FIG. 5, a server device **112** may include one or more components such as: at least one processor **502**, one or more media **504**, logic **506**, circuitry **508**, at least one communication interface **510**, at least one interconnect **512**, at least one power source **514**, at least one entity interface **516**, some combination thereof, or so forth. Furthermore, as shown in schematic diagram **500**, one or more media **504** may comprise one or more instructions **518**, at least one behavioral fingerprint **110**, one or more settings or parameters **520**, some combination thereof, or so forth; or communication interface **510** may comprise at least one wireless communication interface **510a**, at least one wired communication interface **510b**, some combination thereof, or so forth. However, a server device **112** may alternatively include more, fewer, or different component(s) from those that are illustrated without departing from claimed subject matter.

For certain example embodiments, a server device **112** may include or comprise at least one processing or computing device or machine. Server device **112** may comprise, for example, a computing platform or any electronic device or devices having at least one processor or memory. Processor **502** may comprise, by way of example but not limitation, any one or more of a general-purpose processor, a specific-purpose processor, a digital signal processor (DSP), a processing unit, some combination thereof, or so forth. A processing unit may be implemented, for example, with one or more application specific integrated circuits (ASICs), DSPs, digital signal processing devices (DSPDs), programmable logic devices (PLDs), field programmable gate arrays (FPGAs), processors generally, processing cores, discrete/fixed logic circuitry, controllers, micro-controllers, microprocessors, some combination thereof, or so forth. Media **504** may bear, store, contain, include, provide access to, a combination thereof, etc. instructions **518**, which may be executable by a processor **502**; at least one behavioral fingerprint **110**; one or more settings/parameters **520**; some combination thereof; or so forth. Instructions **518** may comprise, by way of example but not limitation, a program, a module, an application or app (e.g., that is native, that runs in a browser, that runs within a virtual machine or server, a combination thereof, etc.), an operating system, a combination thereof, etc. or portion thereof; operational data structures; source code, object code, just-in-time (JIT) compiled code, a combination thereof, etc.; processor-executable instructions; other code; some combination thereof; or so forth. Media **504** may comprise, by way of example but not limitation, processor-accessible or non-transitory media (e.g., memory, random access memory (RAM), read only memory (ROM), flash memory, hard drives, disk-based media, disc-based media, magnetic storage, optical storage, volatile memory, nonvolatile memory, a combination thereof, etc.) that is capable of bearing instructions, at least one behavioral fingerprint, settings, parameters, some combination thereof, or so forth.

For certain example embodiments, execution of instructions **518** by one or more processors **502** may transform server device **112** into a special-purpose computing device, apparatus, platform, machine, some combination thereof, or so forth. Instructions **518** may comprise, for example, instructions that are capable of realizing at least a portion of one or more flow diagrams methods, processes, procedures, operations, functionality, technology, mechanisms, a combination thereof, etc. that are described herein or illustrated in the accompanying drawings. Settings/parameters **520** may comprise, by way of example but not limitation, one or more settings or parameters that may be established by a user or other entity, one or more settings or parameters that may be determined by a server device **112**, one or more settings or parameters that may be determined by a user or other entity, one or more settings or parameters that may be detected by a server device **112**, one or more settings or parameters that may be received from another device that detected them, one or more settings or parameters that may determine at least partly how a server device **112** is to operate or respond to a situation or a behavioral fingerprint, one or more settings or parameters (e.g., values) that may be used to realize flow diagrams, methods, processes, procedures, operations, functionality, technology, mechanisms, a combination thereof, etc. that are described herein or illustrated in the accompanying drawings. Settings/parameters **520** may control at least partially how at least one behavioral fingerprint **110** is configured, stored, shared, used, applied, some combination thereof, or so forth. Additionally or alternatively, at least a

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portion of settings/parameters **520** may be at least partially integrated with at least one behavioral fingerprint **110**.

For certain example embodiments, logic **506** may comprise hardware, software, firmware, discrete/fixed logic circuitry, a combination thereof, etc. that is capable of performing or facilitating performance of flow diagrams, methods, processes, procedures, operations, functionality, technology, mechanisms, a combination thereof, etc. that are described herein or illustrated in the accompanying drawings. Circuitry **508** may comprise hardware, software, firmware, discrete/fixed logic circuitry, a combination thereof, etc. that is capable of performing or facilitating performance of flow diagrams, methods, processes, procedures, operations, functionality, technology, mechanisms, a combination thereof, etc. that are described herein or illustrated in the accompanying drawings, wherein circuitry **508** comprises at least one physical or hardware component or aspect.

For certain example embodiments, one or more communication interfaces **510** may provide one or more interfaces between server device **112** and another device or a person/operator/entity directly or indirectly. A wireless communication interface **510a** or a wired communication interface **510b** may also or alternatively include, by way of example but not limitation, a transceiver (e.g., a transmitter or a receiver), a radio, an antenna, a wired interface connector or other similar apparatus (e.g., a network connector, a universal serial bus (USB) connector, a proprietary connector, a Thunderbolt® or Light Peak® connector, a gateway, a combination thereof, etc.), a physical or logical network adapter or port, a frequency converter, a baseband processor, an Internet or telecommunications backbone connector, a fiber optic connector, a storage area network (SAN) connector, a combination thereof, etc. to communicate wireless signals or wired signals via one or more wireless communication links or wired communication links, respectively, such as over one or more channels **108** (e.g., of FIGS. **1** and **2A**). Communications with at least one communication interface **510** may enable transmitting, receiving, or initiating of transmissions, just to name a few examples.

For certain example embodiments, at least one interconnect **512** may enable signal communication between or among components of server device **112**. Interconnect **512** may comprise, by way of example but not limitation, one or more buses, channels, switching fabrics, local area networks (LANs), storage area networks (SANs), some combination thereof, or so forth. Although not explicitly illustrated in FIG. **5**, one or more components of server device **112** may be coupled to interconnect **512** via a discrete or integrated interface. By way of example only, one or more interfaces may couple a processor **502** or a medium **504** to at least one interconnect **512**. For certain example embodiments, at least one power source **514** may provide power to one or more components of server device **112**. Power source **514** may comprise, by way of example but not limitation, a power connector for accessing an electrical grid, a fuel cell, a solar power source, some combination thereof, or so forth.

For certain example embodiments, an entity interface **516** may enable one or more entities (e.g., another device, a person, a group, a robotic entity, a combination thereof, etc.) to provide input to or receive output from server device **112**. Interactions between an entity and a device may relate, by way of example but not limitation, to inputting or outputting instructions, commands, settings, parameters, indications, some combination thereof, or so forth. Certain entity interfaces **516** may enable both entity input and entity output at server device **112** or over at least one network link, such as one or more channels **108** (e.g., of FIGS. **1** and **2A**).

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However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, or so forth. For instance, it should be understood that for certain example implementations components that are illustrated separately in FIG. **5** need not necessarily be separate or mutually exclusive. For example, a given component may provide multiple functionalities. By way of example only, hard-wired logic **506** may form circuitry **508**. Additionally or alternatively, a single component such as a connector may function as a communication interface **510** or as an entity interface **516**. Additionally or alternatively, one or more instructions **518** may function to realize at least one setting or parameter **520**.

It should also be understood that for certain example implementations components that are illustrated in schematic diagram **500** or described herein may not be integral or integrated with a server device **112**. For example, a component may be removably connected to a server device **112**, a component may be wirelessly coupled to a server device **112**, one or more components of a server device **112** may be geographically distributed or separated from one another, some combination thereof, or so forth. By way of example only, instructions **518** may be stored on one medium **504**, and settings/parameters **520** (or another portion of instructions **518**) may be stored on a different medium **504**, which may comprise a same server or a part of a different server of, e.g., a server farm. Additionally or alternatively, respective processor-media sets may be physically realized on different or respective server blades or server containers. Multiple server blades, for instance, may be linked or interlinked to realize at least one server device **112**. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIGS. **6A** and **6B** are schematic diagrams **600A** and **600B** of an example user device and an example server device, respectively, that have one or more functional units in accordance with certain example embodiments. As shown in FIGS. **6A** and **6B**, by way of example but not limitation, schematic diagrams **600A** and **600B** may comprise a user device **102** and a server device **112**, respectively. As illustrated in schematic diagrams **600A** and **600B**, a user device **102** or a server device **112** may include, but are not limited to, at least one authentication unit **602**, at least one authorization unit **604**, at least one behavioral fingerprint unit **606**, a combination thereof, or so forth. However, a user device **102** or a server device **112** may alternatively include more, fewer, or different unit(s) from those that are illustrated without departing from claimed subject matter.

For certain example embodiments, a unit may be comprised of at least one processor (e.g., a processor **402** of FIG. **4**, a processor **502** of FIG. **5**, a combination thereof, etc.), one or more media (e.g., a medium **404** of FIG. **4**, a media medium **504** of FIG. **5**, a combination thereof, etc.), instructions (e.g., processor-executable instructions, instructions **420** of FIG. **4**, instructions **518** of FIG. **5**, computer-implementable instructions, a combination thereof, etc.), logic (e.g., logic **406** of FIG. **4**, logic **506** of FIG. **5**, a combination thereof, etc.), circuitry (e.g., circuitry **408** of FIG. **4**, circuitry **508** of FIG. **5**, a combination thereof, etc.), other described or illustrated component(s), some combination thereof, or so forth. For certain example implementations, one or more units (e.g., an authentication unit **602**, an authorization unit **604**, a behavioral fingerprint unit **606**, a combination thereof, etc.) of at least one user device **102** may function or interoperate with one or more units of at least one server device **112**. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

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For certain example embodiments, an authentication unit **602** may operate to authenticate a user of a device. For certain example implementations, a user of a device may be authenticated by determining to some (e.g., reasonable, acceptable, measurable, quantifiable, a combination thereof, etc.) degree an identity of a user. By way of example but not limitation, an authentication unit **602** may enable implementation of multiple degrees of authentication, with different degrees of authentication corresponding to different levels of certainty of an identity of a user. Example aspects related to authentication are described further herein (e.g., at least herein above with particular reference to FIG. 1). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an authorization unit **604** may operate to permit or enable full or at least partial access to, use of, implementation of, execution of, a combination thereof, etc. one or more features, applications, accounts, profiles, data, capabilities, a combination thereof, etc. of at least one device, such as a user device **102** or a server device **112**. For certain example implementations, authorization may be fully or at least partially granted, denied, withheld, a combination thereof, etc. based at least partially on an authentication determination, a result from an authentication unit **602**, some combination thereof, or so forth. By way of example but not limitation, an authorization unit **604** may provide for different levels of authorization, including but not limited to for a given authorized user, that correspond to different degrees of authentication, that correspond to different user identities, some combination thereof, or so forth. Example aspects related to authorization are described further herein (e.g., at least herein above with particular reference to FIG. 1). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, a behavioral fingerprint unit **606** may operate to implement, perform, facilitate performance of, a combination thereof, etc. one or more flow diagrams, methods, processes, procedures, operations, functionality, technology, mechanisms, a combination thereof, etc. that are described herein or illustrated in the accompanying drawings or that relate to at least one behavioral fingerprint. For certain example implementations, a behavioral fingerprint unit **606** may provide information, monitored acts, likelihood values, determinations, comparisons, analyses, indications, predicted acts, a combination thereof, etc. to an authentication unit **602** on which it may at least partially base an authentication determination. Example aspects related to behavioral fingerprinting are described further herein above and below. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 7A is a schematic diagram **700A** that includes at least one example device that is capable of handling scenarios for behavioral fingerprinting via inferred personal relation in accordance with certain example embodiments. As shown in FIG. 7A, by way of example but not limitation, schematic diagram **700A** includes at least one device that may comprise a personal relation indication inference unit **702** or a behavioral fingerprint incorporation unit **704**. More specifically, schematic diagram **700A** may include a user device **102** or a server device **112**. By way of example but not limitation, a personal relation indication inference unit **702** or a behavioral fingerprint incorporation unit **704** may comprise one or more modules, hardware, software, firmware, logic, circuitry, some combination thereof, or so forth. However, claimed subject

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matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, a personal relation indication inference unit **702** or a behavioral fingerprint incorporation unit **704** may be implemented separately or at least partially jointly or in combination. A personal relation indication inference unit **702** may be configured to infer at least one indication of personal relation for at least one authorized user via at least one user-device interaction. A behavioral fingerprint incorporation unit **704** may be configured to incorporate the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIGS. 7B-7D are schematic diagrams **700B-700D** that include at least one example device and that depict example scenarios for implementing behavioral fingerprinting via inferred personal relation in accordance with certain example embodiments. As shown in FIGS. 7B-7D, by way of example but not limitation, one or more of schematic diagrams **700B-700D** may include at least one user device **102**, at least one user **104**, at least one behavioral fingerprint **110**, at least one server device **112**, at least one personal relation indication **706**, at least one utilization indicator **708**, at least one user-device interaction **710**, at least one incorporation **712**, or at least one other device **714**. Each of schematic diagrams **700B-700D** may include alternative or additional depictions, which may relate to behavioral fingerprinting via inferred personal relation, as described herein. In addition to or in alternative to description herein below with specific reference to FIGS. 7B-7D, illustrated aspects of schematic diagrams **700B-700D** may be relevant to example description with reference to FIG. 8A-8L or 9A-9G. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

As shown in FIG. 7B, by way of example but not limitation, schematic diagram **700B** may include at least one user device **102**, at least one user **104**, at least one behavioral fingerprint **110**, at least one server device **112**, at least one personal relation indication **706**, at least one utilization indicator **708**, at least one user-device interaction **710**, at least one incorporation **712**, at least one other device **714**, or at least one cloud **716**. More specifically, schematic diagram **700B** may include a user device **102** that may correspond to a user **104**, which user may comprise an authorized user or an unauthorized user; a server **112(1)** or a server **112(2)**; an indication of personal relation **706**; an indicator of utilization **708** of one or more user devices, such as a user device **102**; or at least one user-device interaction **710**, which may facilitate inference of at least one personal relation indication **706**. For certain example embodiments, at least one personal relation indication **706** may include an indication of if, whether, how, a combination thereof, etc. a particular individual is related from a family or other relational perspective (e.g., a trust relational perspective, a professional relational perspective, a friendship relational perspective, a combination thereof, etc.) to a user **104**. An indication of personal relation **706** (or personal relation indication **706**) may comprise, by way of example but not limitation, at least one other indication **324** (e.g., of FIG. 3) or at least one utilization indicator **708**. For certain example embodiments, a user-device interaction **710** may include a passive, an active, a receptive, an initiated, a monitoring, a participating, a combination thereof, etc. type of interaction between at least one user and one or more

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devices (e.g., a user device **102**, a server device **112**, a combination thereof, etc.). For certain example implementations, an incorporation **712** may include incorporating at least a portion of a personal relation indication **706** into at least one behavioral fingerprint **110**. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, at least one utilization indicator **708** may correspond to (e.g., be monitored, detected, observed, effected, a combination thereof, etc. at or by) a user device **102**. An indicator of utilization **708** (or utilization indicator **708**) may comprise, by way of example but not limitation, at least one indicator of any of indicators **302-322** (e.g., of FIG. 3). An indication of personal relation **706** (or personal relation indication **706**) may comprise, by way of example but not limitation, at least one other indication **324** (e.g., of FIG. 3). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, a server device **112(1)** may be operated by or for a social network or third party service provider. A social network may include, by way of example but not limitation, a network, a service, an internet location, a website, a computing infrastructure, an application, an interface, cloud computing, a combination thereof, etc. that enables or facilitates interaction (e.g., via text, images, audio, video, a combination thereof, etc.) between or among two or more members of the social network. The term “social” in social networks should not be interpreted to exclude networks designed or intended for professional or specific purposes. Examples of social networks may include, but are not limited to, Facebook, Google+, Twitter, LinkedIn, Myspace, Pinterest, Classmates[dot]com, Flickr, Foursquare, Friendster, Netlog, Orkut, Sina Weibo, Ozone, Habbo, Instagram, and so forth. For certain example embodiments, a server device **112(2)** may be operated by or for another entity, such as one that infers personal relations or incorporates personal relation indications **706** into behavioral fingerprints **110**. For certain example implementations, another entity that is affiliated with a server device **112(2)** may comprise a provider or utilizer of a cloud service or cloud computing, as represented by cloud **716**. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an other device **714** may be operated or owned by a user **104**, may be operated or owned by a service provider, may be operated or owned by a social network, may be operated or owned by a third party, may be operated by one of the above and owned by another, and so forth. For certain example implementations, other device **714** may be communicatively coupled to user device **102** or a server device **112**. By way of example but not limitation, other device **714** may be integrated with user device **102**, may be physically connected to user device **102**, may be wirelessly coupled to user device **102**, may be coupled by wire to user device **102**, may be coupled to a server device **112**, a combination thereof, and so forth. Other device **714** may additionally or alternatively be capable of bidirectional or unidirectional communication with a server **112(1)** or a server **112(2)** (e.g., via one or more channels **108** (e.g., of FIGS. 1 and 2A), which channel(s) may include at least one network, such as an internet). Other device **714** may comprise, by way of example but not limitation, a point-of-sale (POS) terminal, such as a register; an attachment augmenting a POS terminal; an attachment to a user device **102**; a device that accepts credit, debit, or other payment cards and is coupled to a user device **102**; a device that accepts or gener-

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ates sensor readings and forwards them to a server **112**; a device that forwards other data collected or produced at user device **102** to a server **112**; a combination thereof; and so forth. Data (e.g., relating to behavioral fingerprinting, social networking, personal relations, a combination thereof, etc.) may be collected at or by other device **714** or funneled through other device **714** between or among at least one user device **102** or one or more server devices **112**. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc. Additional or alternative description that may be relevant to schematic diagram **700B** is provided herein below with particular reference to one or more of any of FIGS. 8A-8L or FIGS. 9A-9G.

As shown in FIG. 7C, by way of example but not limitation, schematic diagram **700C** may include at least one user device **102**, at least one user **104**, at least one behavioral fingerprint **110**, at least one server device **112**, at least one personal relation indication **706**, at least one utilization indicator **708**, at least one user-device interaction **710**, at least one incorporation **712**, at least one other device **714**, at least one social network **718**, at least some profile data **720**, at least one social network app **722**, or at least one communication **724**. Additional or alternative description that may be relevant to schematic diagram **700C** is provided herein below with particular reference to one or more of any of FIGS. 8A-8L or FIGS. 9A-9G.

As shown in FIG. 7D, by way of example but not limitation, schematic diagram **700D** may include at least one user device **102**, at least one user **104**, at least one behavioral fingerprint **110**, at least one server device **112**, at least one personal relation indication **706**, at least one utilization indicator **708**, at least one user-device interaction **710**, at least one incorporation **712**, at least one other device **714**, at least one purchase **726**, at least one category **728**, or at least one location **730**. Additional or alternative description that may be relevant to schematic diagram **700D** is provided herein below with particular reference to one or more of any of FIGS. 8A-8L or FIGS. 9A-9G.

Following are a series of flowcharts depicting implementations. For ease of understanding, the flowcharts are organized such that the initial flowcharts present implementations via an example implementation and thereafter the following flowcharts present alternate implementations and/or expansions of the initial flowchart(s) as either sub-component operations or additional component operations building on one or more earlier-presented flowcharts. Those having skill in the art will appreciate that the style of presentation utilized herein (e.g., beginning with a presentation of a flowchart(s) presenting an example implementation and thereafter providing additions to and/or further details in subsequent flowcharts) generally allows for a rapid and easy understanding of the various process implementations. In addition, those skilled in the art will further appreciate that the style of presentation used herein also lends itself well to modular and/or object-oriented program design paradigms.

FIG. 8A is a flow diagram **800A** illustrating an example method for at least one device with regard to behavioral fingerprinting via inferred personal relation in accordance with certain example embodiments. As illustrated, flow diagram **800A** may include any of operations **802-804**. Although operations **802-804** are shown or described in a particular order, it should be understood that methods may be performed in alternative manners without departing from claimed subject matter, including, but not limited to, with a different order or number of operations or with a different relationship between or among operations. Also, at least some operation

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(s) of flow diagram **800A** may be performed so as to be fully or partially overlapping with other operation(s). For certain example embodiments, one or more operations of flow diagram **800A** may be performed by at least one server device (e.g., a server device **112**). Alternatively, one or more operations of flow diagram **800A** may be performed by at least one user device (e.g., a user device **102**).

For certain example embodiments, a method for behavioral fingerprinting via inferred personal relation, which method may be at least partially implemented using hardware (e.g., circuitry, at least one processor, processor-accessible memory, a combination thereof, etc.) such as that of a server device, may comprise an operation **802** or an operation **804**. An operation **802** may be directed at least partially to inferring at least one indication of personal relation for at least one authorized user via at least one user-device interaction. For certain example implementations, at least one server device **112** may infer (e.g., deduce, ascertain, derive, conclude an existence of, glean, surmise, discover, determine, a combination thereof, etc.) at least one indication of personal relation **706** (e.g., one or more indications representing one or more familial relations (e.g., legal, biological, marital, family-in-law such as mother-in-law, parent-child, natural parent-child, adopted parent-child, daughter, uncle, spouse, domestic partner, significant other, boyfriend, girlfriend, partner, a combination thereof, etc.), representing one or more trust relations (e.g., attorney, doctor, nanny, babysitter, god parent, accountant, personal assistant, best friend, a combination thereof, etc.), representing one or more intimate relations (e.g., boyfriend, girlfriend, significant other, partner, fiancé, spouse, domestic partner, a combination thereof, etc.), representing one or more employment or professional relations (e.g., employer, employee, contractor, boss, partner, a combination thereof, etc.), some combination thereof, etc. between or among at least one authorized user and one or more individuals) for at least one authorized user (e.g., a user **104** that is authorized to use a given user device **102** to at least some extent, a user **104** that is associated with a behavioral fingerprint **110** corresponding to a given user device **102**, a combination thereof, etc.) via at least one user-device interaction **710** (e.g., at least one interaction (e.g., a user inputting or sending data or information into or to a device, a user selecting from between or among options provided or offered by a device, a user submitting a request to a device, a user responding to an inquiry from a device, a user viewing or otherwise visiting one or more internet locations via a device, a user entering one or more search terms via a device, a user making one or more purchases via a device, a user visiting one or more physical locations with a device, a combination thereof, etc.) between or among at least one user (e.g., an authorized user, an unauthorized user, a user that is authorized by designation, a combination thereof, etc.) and one or more devices (e.g., a user device **102**, a server device **112**, a combination thereof, etc.)). By way of example but not limitation, a service provider (e.g., an authentication service provider operating at least partially via a cloud computing service or a web infrastructure, such as Apple's iCloud or ebay's PayPal) may infer (e.g., deduce based at least partly on (i) a user response to a device inquiry or (ii) a user submission of a request to or order from a device) at least one indication (e.g., a label, a categorization, a code, a tag, an assignment, one or more words, a combination thereof, etc.) of personal relation (e.g., a parent-child or spousal family relationship, an employee-employer relationship, a co-parent relationship, a fiancé relationship, a combination thereof, etc.) for at least one authorized user (e.g., an owner or permitted operator of an Apple iPhone) via at least one user-device interaction (e.g., a user visiting a

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location, a user ordering a good or service, a combination thereof, etc.). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **804** may be directed at least partially to incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user. For certain example implementations, at least one server device **112** may incorporate **712** (e.g., add, integrate, supplement with, establish links between or among individuals reflecting familial or other personal relations thereof, update using, augment with, replace with, modify using, adapt using, delete at least a portion of, change statistics using, create at least one new predicted act based at least partially on, alter at least one existing predicted act based at least partially on, a combination thereof, etc.) at least one indication **706** of (e.g., a label, a categorization, a code, a tag, an assignment, one or more words, an association, a combination thereof, etc. communicating or representing a) personal relation into at least one behavioral fingerprint **110** that is associated with at least one authorized user, with at least one behavioral fingerprint **110** including one or more indicators **302-322** (e.g., one or more of any of indicators **302-322** of FIG. **3** as described herein above, including but not limited to predicted acts **322**) of utilization **708** (e.g., accessing, using, interacting with, carrying, moving from place to place, providing input to, receiving output from, communicating with, running apps on, requesting or completing or effecting transactions via, directing operation of, a combination thereof, etc.) of one or more user devices **102** by at least one authorized user **104**. By way of example but not limitation, a service provider (e.g., an authentication service provider operating at least partially via the Internet, such as a Google web service) may incorporate (e.g., add at least one piece of datum of, modify at least one entry based on, a combination thereof, etc.) at least one indication of personal relation (e.g., a label that may also be applicable for including as part of a contact entry) into at least one behavioral fingerprint (e.g., a collection of observed or predicted acts or characteristics) that is associated with (e.g., that are inferred from, that are attributable to, that correspond to, a combination thereof, etc.) at least one authorized user (e.g., an owner or registered user of an Android-based smart phone), with the at least one behavioral fingerprint including one or more indicators of utilization (e.g., one or more stored representations of how a user operates a user interface of an Android device, an identification of one or more entities interacted with via the Android device, a listing of one or more purchases made with the Android device, or an enumeration of one or more locations visited using the Android device) of one or more user devices (e.g., an Android-based mobile device such as a Samsung Galaxy smart phone) by the at least one authorized user. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIGS. **8B-8L** depict example additions or alternatives for a flow diagram of FIG. **8A** in accordance with certain example embodiments. As illustrated, flow diagrams of FIGS. **8B-8L** may include any of the illustrated or described operations. Although operations are shown or described in a particular order or with a particular relationship to one or more other operations, it should be understood that methods may be performed in alternative manners without departing from claimed subject matter, including, but not limited to, with a

different order or number of operations or with a different relationship between or among operations (e.g., operations that are illustrated as nested blocks are not necessarily subsidiary operations and may instead be performed independently). Also, at least some operation(s) of flow diagrams of FIGS. 8B-8L may be performed so as to be fully or partially overlapping with other operation(s).

FIG. 8B illustrates a flow diagram 800B having example operations 808, 810, 812, 814, 816, or 818. For certain example embodiments, an operation 808 may be directed at least partially to wherein the inferring at least one indication of personal relation for at least one authorized user via at least one user-device interaction (of operation 802) comprises monitoring one or more purchases by at least one user. For certain example implementations, at least one device may monitor (e.g., observe, detect, record, ascertain, store, analyze, a combination thereof, etc.) one or more purchases 726 (e.g., orders, in-person exchanges, trades for consideration, payments for value, a combination thereof, etc.) by at least one user (e.g., an authorized user, a user approved by an authorized user, an unauthorized user, a user of unknown or indeterminate status, a combination thereof, etc.). By way of example but not limitation, a retail company (e.g., Amazon) may monitor one or more purchases by at least one user (e.g., may catalog or record a history of purchases as part of a behavioral fingerprint for a customer or for a user device). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 810 may be directed at least partially to wherein the monitoring one or more purchases by at least one user (of operation 808) comprises monitoring one or more orders made by at least one user. For certain example implementations, at least one device may monitor one or more orders (e.g., one or more requests, demands, invoices, buy notices, a combination thereof, etc. for at least one good or service) made by at least one user. By way of example but not limitation, a server device (e.g., operated by Google) may monitor one or more orders made by at least one user (e.g., may record or organize orders made or consummated at least partially using Google Wallet). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 812 may be directed at least partially to wherein the monitoring one or more orders made by at least one user (of operation 810) comprises detecting one or more requests for delivery of at least one physical good by at least one user. For certain example implementations, at least one device may detect (e.g., discover, determine, ascertain, learn through inspection, realize via notification, a combination thereof, etc.) one or more requests (e.g., one or more submissions, notifications, inquiries, asks for, solicitations, a combination thereof, etc.) for delivery (e.g., placement at a designated address, entry into shipping, a combination thereof, etc.) of at least one physical good (e.g., a tangible item, personal property, something that may be touched or felt, a combination thereof, etc.) by at least one user. By way of example but not limitation, a server device (e.g., of ebay) may detect one or more requests for delivery of at least one physical good by at least one user (e.g., may store an agreement between a buyer and a seller to convey or ship a purchased physical item from the seller to the buyer). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 814 may be directed at least partially to wherein the monitoring one or

more orders made by at least one user (of operation 810) comprises detecting one or more requests for delivery of at least one virtual good by at least one user. For certain example implementations, at least one device may detect (e.g., discover, determine, ascertain, learn through inspection, realize via notification, a combination thereof, etc.) one or more requests (e.g., one or more submissions, notifications, inquiries, asks for, solicitations, a combination thereof, etc.) for delivery (e.g., electronic transmission or reception, electronic display or audible presentation, a combination thereof, etc.) of at least one virtual good (e.g., a movie, a song, an app, an e-book, an electronic edition of a magazine, an in-game item or ability, a non-physical good, an access capability to at least one feature, a status designation or qualification/membership level, a combination thereof, etc.) by at least one user. By way of example but not limitation, a server device (e.g., for Apple iTunes) may detect one or more requests for delivery of at least one virtual good by at least one user (e.g., may realize or record that a child's television show has been ordered for rental three times a week). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 816 may be directed at least partially to wherein the monitoring one or more orders made by at least one user (of operation 810) comprises detecting one or more requests for pick-up of at least one physical good by at least one user. For certain example implementations, at least one device may detect (e.g., discover, determine, ascertain, learn through inspection, realize via notification, a combination thereof, etc.) one or more requests (e.g., one or more submissions, notifications, inquiries, asks for, solicitations, a combination thereof, etc.) for pick-up (e.g., acceptance or taking of possession at a store, a warehouse, a shipping facility, a combination thereof, etc.) of at least one physical good (e.g., a tangible item, personal property, something that may be touched or felt, a combination thereof, etc.) by at least one user. By way of example but not limitation, a server device (e.g., of Walgreen's) may detect one or more requests for pick-up of at least one physical good by at least one user (e.g., may note and analyze a series of orders for various children's medicines to be acquired via a Walgreen's drive thru). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 818 may be directed at least partially to wherein the monitoring one or more orders made by at least one user (of operation 810) comprises detecting one or more requests for provision of at least one service by at least one user. For certain example implementations, at least one device may detect (e.g., discover, determine, ascertain, learn through inspection, realize via notification, a combination thereof, etc.) one or more requests (e.g., one or more submissions, notifications, inquiries, asks for, solicitations, a combination thereof, etc.) for provision (e.g., application, offering, giving, delivery, a combination thereof, etc.) of at least one service (e.g., work performed for someone, work performed on something, a haircut or facial, accounting work, car repair or maintenance, lawn care, home remodeling, health care, a combination thereof, etc.) by at least one user. By way of example but not limitation, a server device (e.g., of PayPal) may detect one or more requests for provision of at least one service by at least one user (e.g., may realize that repairs on an older-model Oldsmobile are being paid through a PayPal account). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

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FIG. 8C illustrates a flow diagram **800C** having example operations **820**, **822**, or **824**. For certain example embodiments, an operation **820** may be directed at least partially to wherein the monitoring one or more purchases by at least one user (of operation **808**) comprises monitoring one or more in-person exchanges made by at least one user. For certain example implementations, at least one device may monitor (e.g., observe, detect, record, ascertain, store, analyze, a combination thereof, etc.) one or more in-person exchanges (e.g., in-store, face-to-face, at a business' premises, a combination thereof, etc. trade of consideration for at least one good or service) made by at least one user. By way of example but not limitation, a server device (e.g., of Walmart) may monitor one or more in-person exchanges made by at least one user (e.g., may store into a database purchases made through a checkout lane at a Walmart store). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **822** may be directed at least partially to wherein the monitoring one or more in-person exchanges made by at least one user (of operation **820**) comprises detecting one or more acquisitions of at least one physical good by at least one user. For certain example implementations, at least one device may detect (e.g., discover, determine, ascertain, learn through inspection, realize via notification, a combination thereof, etc.) one or more acquisitions (e.g., taking possession of, physically receiving, carrying away, a combination thereof, etc.) of at least one physical good (e.g., a tangible item, personal property, something that may be touched or felt, a combination thereof, etc.) by at least one user. By way of example but not limitation, a server device (e.g., of Starbucks) may detect one or more acquisitions of at least one physical good by at least one user (e.g., a server device may receive from a register device at a Starbucks' store a description of a purchase of a cup of coffee or a pastry item). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **824** may be directed at least partially to wherein the monitoring one or more in-person exchanges made by at least one user (of operation **820**) comprises detecting one or more procurements of at least one service by at least one user. For certain example implementations, at least one device may detect (e.g., discover, determine, ascertain, learn through inspection, realize via notification, a combination thereof, etc.) one or more procurements (e.g., securing of work performance, requesting of work, receiving of work, a combination thereof, etc.) of at least one service (e.g., work performed for someone, work performed on something, a haircut or facial, accounting work, car repair or maintenance, lawn care, home remodeling, health care, a combination thereof, etc.) by at least one user. By way of example but not limitation, a server device (e.g., of Groupon that is in communication with a vendor's system or an app on a customer's user device) may detect one or more procurements of at least one service by at least one user (e.g., may receive notification that a coupon for discounted kickboxing lessons has been redeemed). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 8D illustrates a flow diagram **800D** having example operations **826**, **828**, **830**, **832**, or **834**. For certain example embodiments, an operation **826** may be directed at least partially to wherein the monitoring one or more purchases by at least one user (of operation **808**) comprises ascertaining at least one category of the one or more purchases made by the at least one user. For certain example implementations, at

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least one device may ascertain (e.g., determine, acquire, divine, a combination thereof, etc.) at least one category **728** (e.g., a topic; a subject-matter; a target-audience; a likely user of a good; a likely recipient of a service; a sub-topic; an age, gender, or other demographic attribute of a targeted customer; a combination thereof; etc.) of one or more purchases **726** made by at least one user. By way of example but not limitation, a server device (e.g., of Target) may ascertain at least one category of one or more purchases made by at least one user (e.g., a Target server may categorize purchased goods into store areas, such as sporting goods or housewares, or into age-appropriateness, such as adult movies or children's clothing). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **828** may be directed at least partially to wherein the ascertaining at least one category of the one or more purchases made by the at least one user (of operation **826**) comprises comparing at least one store name to one or more entries in at least one purchase categorization database. For certain example implementations, at least one device may compare (e.g., determine similarities, determine differences, determine if there is a match, a combination thereof, etc.) at least one store name (e.g., a legal name, a common name, a name on a sign, a corporate name, a combination thereof, etc.) to one or more entries (e.g., at least a part of one or more fields, blocks, variables, tables, indexes, a combination thereof, etc.) in at least one purchase categorization database (e.g., a hierarchical, networked, relational, a combination thereof, etc. database that links store names to at least one corresponding category). By way of example but not limitation, a server device (e.g., of Visa) may compare at least one store name to one or more entries in at least one purchase categorization database (e.g., Visa may compare the names of stores at which a card holder has made purchases to determine categories of shopping engaged in by the card holder). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **830** may be directed at least partially to wherein the ascertaining at least one category of the one or more purchases made by the at least one user (of operation **826**) comprises comparing at least one product identifier to one or more entries in at least one purchase categorization database. For certain example implementations, at least one device may compare at least one product identifier (e.g., a product name, a product code (e.g., a universal product code (UPC), a quick response (QR) code, a stock keeping unit (SKU), a combination thereof, etc.), a product alphanumeric designator, some combination thereof, etc.) to one or more entries (e.g., at least a part of one or more fields, blocks, variables, tables, indexes, a combination thereof, etc.) in at least one purchase categorization database (e.g., a hierarchical, networked, relational, a combination thereof, etc. database that links product identifiers to at least one corresponding category). By way of example but not limitation, a server device (e.g., of a grocery store such as Safeway) may compare at least one product identifier to one or more entries in at least one purchase categorization database (e.g., Safeway may compare proprietary product codes or manufacturer product codes of groceries purchased by a Safeway Card holder to groceries identified in a database that includes corresponding consumer traits). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **832** may be directed at least partially to wherein the ascertaining at

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least one category of the one or more purchases made by the at least one user (of operation **826**) comprises searching for at least one association of at least one store name with one or more characteristics of store customers. For certain example implementations, at least one device may search (e.g., analyze, review, inspect, a combination thereof, etc. tables, entries, spreadsheets, data structures, databases, a combination thereof, etc.) for at least one association (e.g., a one-way linking, a two-way linking, a tuple, a relation, a combination thereof, etc.) of at least one store name (e.g., a legal name, a common name, a name on a sign, a corporate name, a combination thereof, etc.) with one or more characteristics (e.g., demographic information such as age, gender, income level, education a combination thereof, etc.; preferred style attributes; category of consumer; geographical location; likely related items that might be appealing; some combination thereof; and so forth) of store customers. By way of example but not limitation, a server device (e.g., of Apple that operates at least partially to support Passbook) may search for at least one association of at least one store name with one or more characteristics of store customers (e.g., may attempt to identify with reference to a data structure an income level associated with typical customers of Restoration Hardware). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **834** may be directed at least partially to wherein the ascertaining at least one category of the one or more purchases made by the at least one user (of operation **826**) comprises searching for at least one association of at least one product identifier with one or more characteristics of product purchasers. For certain example implementations, at least one device may search (e.g., analyze, review, inspect, a combination thereof, etc. tables, entries, spreadsheets, data structures, databases, a combination thereof, etc.) for at least one association (e.g., a one-way linking, a two-way linking, a tuple, a relation, a combination thereof, etc.) of at least one product identifier (e.g., a product name, a product code (e.g., a UPC, a QR code, a SKU, a combination thereof, etc.), a product alphanumeric designator, some combination thereof, etc.) with one or more characteristics (e.g., demographic information such as age, gender, income level, education a combination thereof, etc.; preferred style attributes; category of consumer; geographical location; likely related items of interest; some combination thereof; and so forth) of product purchasers. By way of example but not limitation, a server device (e.g., of Limited Brands stores) may search for at least one association of at least one product identifier with one or more characteristics of product purchasers (e.g., may attempt to identify with reference to a data structure an age and gender associated with typical purchasers of Bath & Body Works-branded scented hand sanitizers). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. **8E** illustrates a flow diagram **800E** having example operations **836**, **838**, **840**, **842**, or **844**. For certain example embodiments, an operation **836** may be directed at least partially to wherein the monitoring one or more purchases by at least one user (of operation **808**) comprises deducing that at least one personal relation includes at least one child based at least partially on at least one purchase categorization. For certain example implementations, at least one device may deduce (e.g., derive, conclude from evidence, determine, reason, surmise, glean, a combination thereof, etc.) that at least one personal relation (e.g., at least one person that is a legal or effective family member or that is a good friend of a family member) includes at least one child (e.g., a person under 18,

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a teenager, a juvenile, an infant, a combination thereof, etc.) based at least partially on at least one purchase categorization (e.g., a category **728** applied to or associated with a purchase). By way of example but not limitation, a server device (e.g., of a computer security company such as McAfee) may deduce that at least one personal relation includes at least one child based at least partially on at least one purchase categorization (e.g., may deduce that a customer is close to a young boy based on repeated action figure purchases that are categorized as correspond to pre-teen boys). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **838** may be directed at least partially to wherein the monitoring one or more purchases by at least one user (of operation **808**) comprises deducing that at least one personal relation includes at least one senior citizen based at least partially on at least one purchase categorization. For certain example implementations, at least one device may deduce (e.g., derive, conclude from evidence, determine, reason, surmise, glean, a combination thereof, etc.) that at least one personal relation (e.g., at least one person that is a legal or effective family member or that is a trusted professional associate) includes at least one senior citizen (e.g., a person over 55 years old, a person over 65 years old, a person that is retired, a person that is eligible for age-based governmental benefits, a combination thereof, etc.) based at least partially on at least one purchase categorization (e.g., a category **728** applied to or associated with a purchase). By way of example but not limitation, a server device (e.g., of American Express) may deduce that at least one personal relation includes at least one senior citizen based at least partially on at least one purchase categorization (e.g., may deduce that a customer with an age under 40 is close to a senior citizen based at least partly on a gift membership to AARP, which is categorized as corresponding to retired people). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **840** may be directed at least partially to wherein the monitoring one or more purchases by at least one user (of operation **808**) comprises deducing that at least one personal relation includes at least one female relation based at least partially on at least one purchase categorization. For certain example implementations, at least one device may deduce (e.g., derive, conclude from evidence, determine, reason, surmise, glean, a combination thereof, etc.) that at least one personal relation (e.g., at least one person that is a legal or effective family member or that is a trusted professional associate) includes at least one female relation based at least partially on at least one purchase categorization (e.g., a category **728** applied to or associated with a purchase). By way of example but not limitation, a server device (e.g., of ProFlowers) may deduce that at least one personal relation includes at least one female relation based at least partially on at least one purchase categorization (e.g., may deduce that a customer has a female relation because of annual flower or plant purchases around Mother's Day, which floral purchases that are contemporaneous with Mother's Day being categorized as corresponding to women). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **842** may be directed at least partially to wherein the monitoring one or more purchases by at least one user (of operation **842**) comprises deducing that at least one personal relation includes at least one male relation based at least partially on at least one

purchase categorization. For certain example implementations, at least one device may deduce (e.g., derive, conclude from evidence, determine, reason, surmise, glean, a combination thereof, etc.) that at least one personal relation (e.g., at least one person that is a legal or effective family member or that is a trusted professional associate) includes at least one male relation based at least partially on at least one purchase categorization (e.g., a category **728** applied to or associated with a purchase). By way of example but not limitation, a server device (e.g., of MasterCard) may deduce that at least one personal relation includes at least one male relation based at least partially on at least one purchase categorization (e.g., may deduce that a credit card customer has a male relation because of occasional purchases of fishing equipment, which fishing equipment purchases are categorized as corresponding to men, when other purchases are predominately categorized as corresponding to women). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **844** may be directed at least partially to wherein the monitoring one or more purchases by at least one user (of operation **808**) comprises deducing at least one personal relation based at least partly on the one or more purchases. For certain example implementations, at least one device may deduce (e.g., derive, conclude from evidence, determine, reason, surmise, glean, a combination thereof, etc.) at least one personal relation (e.g., at least one person that is a legal or effective family member or that is a trusted confidant or confidante) based at least partly on one or more purchases. By way of example but not limitation, a server device (e.g., of Google that supports Google Wallet) may deduce at least one personal relation based at least partly on one or more purchases (e.g., may deduce that two people are close friends if they live apart but purchase lunch at the same location within seconds of each other three to four times a week). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. **8F** illustrates a flow diagram **800F** having example operations **846a**, **846b**, **848**, **850**, or **852**. For certain example embodiments, an operation **846a** and an operation **846b** may be directed at least partially to wherein the inferring at least one indication of personal relation for at least one authorized user via at least one user-device interaction (of operation **802**) comprises: inferring at least one personal relation of the at least one authorized user based at least partly on the at least one user-device interaction (for operation **846a**) and formulating the at least one indication of personal relation responsive to the at least one inferred personal relation (for operation **846b**). For certain example implementations, at least one device may infer (e.g., deduce, ascertain, derive, conclude an existence of, glean, surmise, discover, determine, a combination thereof, etc.) at least one personal relation (e.g., at least one person that is a legal or effective family member or that is a trusted professional associate or confidant) of at least one authorized user based at least partly on at least one user-device interaction **710** (e.g., at least one interaction (e.g., a user inputting or sending data or information into or to a device, a user selecting from between or among options provided or offered by a device, a user submitting a request to a device, a user responding to an inquiry from a device, a user viewing or otherwise visiting one or more internet locations via a device, a user entering one or more search terms via a device, a user making one or more purchases via a device, a user visiting one or more physical locations with a device, a combination thereof, etc.) between or among at least one user (e.g., an authorized user, an unauthorized user, a user that is

authorized by designation, a combination thereof, etc.) and one or more devices (e.g., a user device **102**, a server device **112**, a combination thereof, etc.) and may formulate at least one indication of personal relation **706** (e.g., one or more indications representing one or more familial relations (e.g., legal, biological, marital, family-in-law such as mother-in-law, parent-child, natural parent-child, adopted parent-child, daughter, uncle, spouse, domestic partner, significant other, boyfriend, girlfriend, partner, a combination thereof, etc.), representing one or more trust relations (e.g., attorney, doctor, nanny, babysitter, god parent, accountant, personal assistant, best friend, a combination thereof, etc.), representing one or more intimate relations (e.g., boyfriend, girlfriend, significant other, partner, fiancé, spouse, domestic partner, a combination thereof, etc.), representing one or more employment or professional relations (e.g., employer, employee, contractor, boss, a combination thereof, etc.), some combination thereof, etc. between or among at least one authorized user and one or more individuals) responsive to at least one inferred personal relation. By way of example but not limitation, a server device (e.g., of Amazon) may infer at least one personal relation of at least one authorized user based at least partly on at least one user-device interaction (e.g., may infer that a person is a nephew of a customer based on a gift card order coupled with a message including a phrase “favorite nephew”) and may formulate at least one indication of personal relation responsive to at least one inferred personal relation (e.g., may create a tag or data structure, may append a label to an existing data structure such as a customer profile, a combination thereof, etc. that connotes that a customer has a nephew, without or without an explicit identification of the nephew). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **848** may be directed at least partially to wherein the formulating the at least one indication of personal relation responsive to the at least one inferred personal relation (of operation **846b**) comprises preparing the at least one indication of personal relation in accordance with at least one behavioral fingerprint format. For certain example implementations, at least one device may prepare (e.g., create from scratch, amend an existing, append to a previous, a combination thereof, etc.) at least one indication of personal relation **706** in accordance with at least one behavioral fingerprint format (e.g., a proprietary or standardized approach to terms or organization of a behavioral fingerprint or portion thereof). By way of example but not limitation, a server device (e.g., of Amazon) may prepare at least one indication of personal relation in accordance with at least one behavioral fingerprint format (e.g., may add a nephew entry to a relations portion of a customer profile in a proprietary format). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **850** may be directed at least partially to wherein the preparing the at least one indication of personal relation in accordance with at least one behavioral fingerprint format (of operation **848**) comprises including at least one likelihood with the at least one indication of personal relation for the at least one behavioral fingerprint. For certain example implementations, at least one device may include (e.g., may add, insert, append, comprise, have, a combination thereof, etc.) at least one likelihood (e.g., a probability, a prediction, an estimation of accuracy, an expectation of correctness, a potentiality, a percentage, a range, a statistical value, a combination thereof, etc.) with at least one indication **706** of personal relation (e.g., at

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least one person that is a legal or effective family member or that is a trusted professional associate or confidante) for at least one behavioral fingerprint **110**. By way of example but not limitation, a server device (e.g., of Amazon) may include at least one likelihood with at least one indication of personal relation for at least one behavioral fingerprint (e.g., may insert a statistical value into a behavioral fingerprint indicating a confidence that a nephew relation has been correctly inferred). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **852** may be directed at least partially to wherein the inferring at least one indication of personal relation for at least one authorized user via at least one user-device interaction (of operation **802**) comprises receiving at least a representation of the at least one user-device interaction. For certain example implementations, at least one device may receive (e.g., wirelessly or by wire from a user device; a server device; an intermediate device, such as a cash register machine; a combination thereof; etc.) at least a representation of (e.g., a description of, a reference to, a code identifying, a summary of, a snapshot of, a combination thereof, etc.) at least one user-device interaction **710** (e.g., at least one interaction (e.g., a user inputting or sending data or information into or to a device, a user selecting from between or among options provided or offered by a device, a user submitting a request to a device, a user responding to an inquiry from a device, a user contacting one or more internet destinations via a device, a user entering one or more search terms via a device, a user making one or more purchases via a device, a user visiting one or more physical locations with a device, a combination thereof, etc.) between or among at least one user (e.g., an authorized user, an unauthorized user, a user that is authorized by designation, a combination thereof, etc.) and one or more devices (e.g., a user device **102**, a server device **112**, a combination thereof, etc.)). By way of example but not limitation, a server device (e.g., a server providing iCloud services to Apple itself or to its customers) may receive at least a representation of at least one user-device interaction (e.g., may receive from an iPhone a description of a POS purchase made using the iPhone, with the description including a vendor, a purchased item, a cost of the purchased item, a location of the purchase, a combination thereof, etc.). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 8G illustrates a flow diagram **800G** having example operations **854**, **856**, **858**, **860**, **862**, or **864**. For certain example embodiments, an operation **854** may be directed at least partially to wherein the inferring at least one indication of personal relation for at least one authorized user via at least one user-device interaction (of operation **802**) comprises monitoring one or more locations visited by at least one user. For certain example implementations, at least one device may monitor (e.g., observe, detect, record, ascertain, determine, store, analyze, a combination thereof, etc.) one or more locations **730** (e.g., a virtual location—such as a website, internet-connected server, virtual world, or virtual world location; a physical location—such as an address, GPS coordinates, or an identifiable place like a neighborhood or friend's home; a combination thereof; etc.) visited (e.g., at least partially rendered, displayed, viewed, downloaded, printed, streamed from, electronically-contacted, information retrieved from, information provided to, physically traveling to, being present at, arriving at, checking in at, meeting a person at, a combination thereof, etc.) by at least one user. By way of example but not limitation, a server device (e.g., of Google)

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may monitor one or more locations visited by at least one user (e.g., may recognize or store for future use a destination to which a person arrives, such as an address or GPS coordinates). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **856** may be directed at least partially to wherein the monitoring one or more locations visited by at least one user (of operation **854**) comprises determining if the one or more locations visited by the at least one user are appropriate for a youth. For certain example implementations, at least one device may determine (e.g., ascertain, figure out, discern, discover, divine, a combination thereof, etc.) if one or more locations **730** (e.g., an address, a place, SPS coordinates, a physical location, a combination thereof, etc.) visited (e.g., physically traveled to, being present at, arriving at, checking in at, meeting a person at, a combination thereof, etc.) by at least one user are appropriate for a youth (e.g., are where young people frequent, are not dangerous for young people, are not unlawful for those under 21, are attractive or popular to people under 18, are places to which children are required to attend, a combination thereof, etc.). By way of example but not limitation, a server device (e.g., of an electronic security company such as Norton) may determine if one or more locations visited by at least one user are appropriate for a youth (e.g., may determine if or whether a location is a school, a daycare, a pediatrician's office, a store that caters to kids, etc.). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **858** may be directed at least partially to wherein the monitoring one or more locations visited by at least one user (of operation **854**) comprises deducing that at least one personal relation includes at least one child based at least partially on a determination that the one or more locations visited by the at least one user are appropriate for a youth. For certain example implementations, at least one device may deduce (e.g., derive, conclude from evidence, determine, reason, surmise, glean, a combination thereof, etc.) that at least one personal relation (e.g., at least one person that is a legal or effective family member or that is a ward of a user) includes at least one child (e.g., a person under 18, a teenager, a juvenile, an infant, a combination thereof, etc.) based at least partially on a determination (e.g., a decision, an ascertainment, a discovery, a combination thereof, etc.) that one or more locations **730** visited by at least one user are appropriate for a youth (e.g., are where young people frequent, are not dangerous, are not unlawful for people under 21, are attractive or popular to people under 18, are places to which children are required to attend, a combination thereof, etc.). By way of example but not limitation, a server device (e.g., an Apple server receiving location data from an iPhone) may deduce that at least one personal relation includes at least one child based at least partially on a determination that the one or more locations visited by the at least one user are appropriate for a youth (e.g., may determine that an Apple account holder has responsibility for a child aged approximately 5-10 because the user visits an elementary school every morning between 8:00 and 8:10 am). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **860** may be directed at least partially to wherein the monitoring one or more locations visited by at least one user (of operation **854**) comprises detecting a visitation pattern with the one or more locations visited by the at least one user. For certain example

implementations, at least one device may detect (e.g., discover, determine, ascertain, learn through inspection or analysis, realize via notification, a combination thereof, etc.) a visitation pattern (e.g., a recurrence of visitations, a repetition in time such as daily or weekly, a repetition in space such as a particular store or neighborhood, a combination thereof, etc.) with one or more locations **730** (e.g., postal addresses; GPS coordinates; identifiable places like a business, a neighborhood, or a relative's home; a combination thereof; etc.) visited by at least one user. By way of example but not limitation, a server device (e.g., for Apple in conjunction with Maps or Passbook) may detect a visitation pattern with one or more locations visited by at least one user (e.g., may detect from GPS coordinates received from a user's iPhone that the user utilizes a particular Starbucks drive thru each weekday morning). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **862** may be directed at least partially to wherein the monitoring one or more locations visited by at least one user (of operation **854**) comprises determining if the one or more locations visited by the at least one user are appropriate for a senior citizen. For certain example implementations, at least one device may determine (e.g., ascertain, figure out, discern, discover, divine, a combination thereof, etc.) if one or more locations **730** (e.g., an address, a place, SPS coordinates, a physical location, a combination thereof, etc.) visited by at least one user are appropriate for a senior citizen (e.g., a person over 55 years old, a person over 65 years old, a person that is retired, a person that is eligible for age-based governmental benefits, a combination thereof, etc.). By way of example but not limitation, a server device (e.g., of Bank of America for a debit card or checking draft system) may determine if one or more locations visited by at least one user are appropriate for a senior citizen (e.g., may determine if or whether a location is a senior citizen center, a business catering to senior citizens, an assisted living facility, a medical practice that accepts Medicare, a combination thereof, etc.). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **864** may be directed at least partially to wherein the monitoring one or more locations visited by at least one user (of operation **854**) comprises deducing that at least one personal relation includes at least one grandparent based at least partially on a determination that the one or more locations visited by the at least one user are appropriate for a senior citizen. For certain example implementations, at least one device may deduce (e.g., derive, conclude from evidence, determine, reason, surmise, glean, a combination thereof, etc.) that at least one personal relation (e.g., at least one person that is a legal or effective family member) includes at least one grandparent based at least partially on a determination (e.g., a decision, an ascertainment, a discovery, a combination thereof, etc.) that one or more locations **730** visited by at least one user are appropriate for a senior citizen (e.g., are where senior citizens frequent, provide goods or services targeted toward senior citizens, are places at which senior citizens live, a combination thereof, etc.). By way of example but not limitation, a server device (e.g., of a payments company such as PayPal) may deduce that at least one personal relation includes at least one grandparent based at least partially on a determination that one or more locations visited by at least one user are appropriate for a senior citizen (e.g., may determine that a PayPal account holder has a grandparent, and thus that funds may be expended on goods or services appropriate for a

senior citizen, if the account holder parks at a senior citizen's center each Tuesday and Thursday at 11 am and 2 pm for 8-12 minutes). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 8H illustrates a flow diagram **800H** having example operations **866**, **868**, **870**, or **872**. For certain example embodiments, an operation **866** may be directed at least partially to wherein the monitoring one or more locations visited by at least one user (of operation **854**) comprises ascertaining demographic data for patrons corresponding to the one or more locations visited by the at least one user. For certain example implementations, at least one device may ascertain (e.g., determine, acquire, divine, a combination thereof, etc.) demographic data (e.g., age, gender, income level, education level, likely interests, vocations, avocations, possible preferences, a combination thereof, etc.) for patrons (e.g., customers, potential customers, people perusing or considering offered goods or services, visitors, clients, people enjoying a locale or establishment or area, a combination thereof, etc.) corresponding to one or more locations **730** (e.g., an address, a place, SPS coordinates, a physical location, a series of physical locations, a path, an area, a combination thereof, etc.) visited (e.g., physically traveled to, being present at, arrived at, checking in at, meeting a person at, a combination thereof, etc.) by at least one user. By way of example but not limitation, a server device (e.g., of Apple) may ascertain demographic data for patrons corresponding to one or more locations visited by at least one user (e.g., may retrieve demographic data from a proprietary or public database for people who shop at Pier One if the user is detected to be shopping at a Pier One location based on location data reported by an iPhone). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **868** may be directed at least partially to wherein the ascertaining demographic data for patrons corresponding to the one or more locations visited by the at least one user (of operation **866**) comprises obtaining the demographic data for the patrons corresponding to the one or more locations visited by the at least one user responsive at least partly to one or more geographic coordinates associated with the one or more locations. For certain example implementations, at least one device may obtain (e.g., secure, retrieve, extract, ascertain, a combination thereof, etc.) demographic data for patrons corresponding to one or more locations **730** visited by at least one user responsive at least partly to one or more geographic coordinates (e.g., map coordinates such as degrees or miles, satellite positioning system (SPS) coordinates, a combination thereof, etc.) associated with the one or more locations. By way of example but not limitation, a server device (e.g., of Starbucks) may obtain demographic data for patrons corresponding to one or more locations visited by at least one user responsive at least partly to one or more geographic coordinates associated with the one or more locations (e.g., after receiving particular GPS coordinates from a Starbucks app on an Android phone, a Starbucks server may acquire demographic data for patrons of a business corresponding to the GPS coordinates). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **870** may be directed at least partially to wherein the ascertaining demographic data for patrons corresponding to the one or more locations visited by the at least one user (of operation **866**) comprises obtaining the demographic data for the

patrons corresponding to the one or more locations visited by the at least one user responsive at least partly to one or more physical postal addresses associated with the one or more locations. For certain example implementations, at least one device may obtain (e.g., secure, retrieve, extract, ascertain, a combination thereof, etc.) demographic data for patrons corresponding to one or more locations **730** visited by at least one user responsive at least partly to one or more physical postal addresses (e.g., street name, street number, city name, postal code such as ZIP code, a combination thereof, etc.) associated with one or more locations. By way of example but not limitation, a server device (e.g., of Google) may obtain demographic data for patrons corresponding to one or more locations visited by at least one user responsive at least partly to one or more physical postal addresses associated with the one or more locations (e.g., after receiving a physical postal address from a browser-based map search, a Google server may acquire demographic data for patrons of an establishment corresponding to the postal address). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **872** may be directed at least partially to wherein the ascertaining demographic data for patrons corresponding to the one or more locations visited by the at least one user (of operation **866**) comprises obtaining the demographic data for the patrons corresponding to the one or more locations visited by the at least one user responsive at least partly to one or more place names associated with the one or more locations. For certain example implementations, at least one device may obtain (e.g., secure, retrieve, extract, ascertain, a combination thereof, etc.) demographic data for patrons corresponding to one or more locations **730** visited by at least one user responsive at least partly to one or more place names (e.g., a neighborhood name, a landmark name, a store name, a museum name, a governmental site name, a city name, a school name, a building name, a business establishment name, a name of an entertainment area, a tourist attraction name, a combination thereof, etc.) associated with the one or more locations. By way of example but not limitation, a server device (e.g., of Apple) may obtain demographic data for patrons corresponding to one or more locations visited by at least one user responsive at least partly to one or more place names associated with the one or more locations (e.g., after receiving a particular place name via Siri for a map feature of an iPhone, an Apple server may acquire demographic data for patrons of a location corresponding to the place name "Metropolitan Museum of Art"). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. **81** illustrates a flow diagram **800I** having example operations **874**, **876**, **878**, or **880**. For certain example embodiments, an operation **874** may be directed at least partially to wherein the inferring at least one indication of personal relation for at least one authorized user via at least one user-device interaction (of operation **802**) comprises inferring the at least one indication of personal relation based at least partially on one or more communications that occur on a particular day. For certain example implementations, at least one device may infer (e.g., deduce, ascertain, derive, conclude an existence of, glean, surmise, discover, determine, a combination thereof, etc.) at least one indication of personal relation **706** (e.g., at least one person that is a legal or effective family member or that is a trusted associate or friend) based at least partially on one or more communications **724** (e.g., a text message, a phone call, an email, a social network communication, a transcribed video call, a chat, a combination

thereof, etc.) that occur on a particular day (e.g., a day having an identifiable noteworthiness generally or contextually based at least partly on the parties to a communication). By way of example but not limitation, a server device (e.g., associated with a security company such as Kaspersky that may also has software executing on a user device) may infer at least one indication of personal relation based at least partially on one or more communications that occur on a particular day (e.g., may infer that one or more persons called on a non work day, such as Saturday or a Sunday, are at least also personal contacts). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **876** may be directed at least partially to wherein the inferring the at least one indication of personal relation based at least partially on one or more communications that occur on a particular day (of operation **874**) comprises inferring the at least one indication of personal relation based at least partially on the particular day being associated with a holiday. For certain example implementations, at least one device may infer at least one indication of personal relation **706** based at least partially on a particular day being associated with a holiday (e.g., a legal holiday, a regional holiday, a national or world-recognized holiday, a commercial holiday, a combination thereof, etc.). By way of example but not limitation, a server device (e.g., of Hallmark) may infer at least one indication of personal relation based at least partially on a particular day being associated with a holiday (e.g., may infer that women called on Mother's Day are female family relations with children and likely a mother or grandmother of a calling party). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **878** may be directed at least partially to wherein the inferring the at least one indication of personal relation based at least partially on one or more communications that occur on a particular day (of operation **874**) comprises inferring the at least one indication of personal relation based at least partially on at least one length of the one or more communications. For certain example implementations, at least one device may infer at least one indication **706** of personal relation based at least partially on at least one length of one or more communications. By way of example but not limitation, a server device (e.g., of a discount deals company such as Groupon) may infer at least one indication of personal relation based at least partially on at least one length of one or more communications (e.g., may infer that an individual is a grandparent of an authorized user if a longer-than-average phone call to the individual occurs on Grandparent's Day). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **880** may be directed at least partially to wherein the inferring the at least one indication of personal relation based at least partially on one or more communications that occur on a particular day (of operation **874**) comprises inferring the at least one indication of personal relation based at least partially on at least one recurrence pattern of the one or more communications. For certain example implementations, at least one device may infer at least one indication of personal relation **706** based at least partially on at least one recurrence pattern (e.g., a daily repetition, a weekly repetition on a same day each week, a repetition on a given holiday, a combination thereof, etc.) of one or more communications. By way of example but not limitation, a server device (e.g., of Verizon)

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may infer at least one indication of personal relation based at least partially on at least one recurrence pattern of one or more communications (e.g., may infer that two people are close friends when one texts the other early in the day each year on the other's birthday). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 8J illustrates a flow diagram 800J having example operations 882 or 884. For certain example embodiments, an operation 882 may be directed at least partially to wherein the inferring at least one indication of personal relation for at least one authorized user via at least one user-device interaction (of operation 802) comprises ascertaining a certainty level to associate with the at least one indication of personal relation. For certain example implementations, at least one device may ascertain (e.g., determine, acquire, divine, a combination thereof, etc.) a certainty level (e.g., a qualitative indication, a relative ranking, a label that corresponds to one of multiple levels of confidence, a combination thereof, etc.) to associate (e.g., tag, link, annotate, include, label, a combination thereof, etc.) with at least one indication 706 of personal relation. By way of example but not limitation, a server device (e.g., of Apple) may ascertain a certainty level to associate with at least one indication of personal relation (e.g., may ascertain that an inferred sibling relationship is to be tagged with a "fairly likely" or blue certainty level unless or until an additional user-device interaction causes the certainty level to be raised to "very likely" or green). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 884 may be directed at least partially to wherein the inferring at least one indication of personal relation for at least one authorized user via at least one user-device interaction (of operation 802) comprises ascertaining a reliability indicator corresponding to the at least one inferred indication of personal relation. For certain example implementations, at least one device may ascertain (e.g., determine, acquire, divine, a combination thereof, etc.) a reliability indicator (e.g., a quantitative indication, a numerical value, a probability, a range, a likelihood estimate, a confidence interval, a credible interval, a statistical value, a statistical range, a combination thereof, etc.) corresponding to at least one inferred indication of personal relation 706. By way of example but not limitation, a server device (e.g., of Google) may ascertain a reliability indicator corresponding to at least one inferred indication of personal relation (e.g., may determine a confidence interval from calculations used to infer that a contacted individual is a trusted friend). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 8K illustrates a flow diagram 800K having example operations 886, 888, or 890. For certain example embodiments, an operation 886 may be directed at least partially to wherein the inferring at least one indication of personal relation for at least one authorized user via at least one user-device interaction (of operation 802) comprises obtaining the at least one indication of personal relation for the at least one authorized user via at least one social networking user-device interaction from at least one social network. For certain example implementations, at least one device may obtain at least one indication of personal relation 706 for at least one authorized user via at least one social networking user-device interaction 710 from at least one social network 718 (e.g., a network, a service, a website, a computing infrastructure, an application, an interface, cloud computing, a combination thereof, etc. that enables or facilitates interaction (e.g., via

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text, images, audio, video, a combination thereof, etc.) between or among two or more members). By way of example but not limitation, a cloud-based service (e.g., a service from a debit card provider such as Bank of America) may obtain at least one indication of personal relation (e.g., an indication of the existence of an aunt) for at least one authorized user via at least one social networking user-device interaction (e.g., a message sent between or among at least two friends via a user device) from at least one social network (e.g., from Facebook or Myspace). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 888 may be directed at least partially to wherein the obtaining the at least one indication of personal relation for the at least one authorized user via at least one social networking user-device interaction from at least one social network (of operation 886) comprises obtaining the at least one indication of personal relation for the at least one authorized user from the at least one social network from profile data that is associated with an account for the at least one authorized user with the at least one social network. For certain example implementations, at least one device may obtain at least one indication 706 of personal relation for at least one authorized user from at least one social network 718 from profile data 720 that is associated with an account for the at least one authorized user with the at least one social network. By way of example but not limitation, a web-based service (e.g., a service such as PayPal that may offer payment authentication services) may obtain at least one indication of personal relation (e.g., a spouse, a first child's name, a second child's name, etc.) for at least one authorized user from at least one social network (e.g., Facebook) from profile data (e.g., demographic or other data that may be provided if the authorized user establishes a Facebook account) that is associated with an account (e.g., identifiable by a username such as an email or phone number) for the at least one authorized user with the at least one social network. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 890 may be directed at least partially to wherein the obtaining the at least one indication of personal relation for the at least one authorized user via at least one social networking user-device interaction from at least one social network (of operation 886) comprises retrieving the at least one indication of personal relation for the at least one authorized user from at least a part of one or more servers operated by or for the at least one social network. For certain example implementations, at least one device (e.g., at least one server 112(2)) may retrieve at least one indication 706 of personal relation for at least one authorized user from at least a part (e.g., from a single physical or virtual server, from a distributed server, from a part of a server farm, from multiple servers, a combination thereof, etc.) of one or more servers (e.g., at least one server 112(1)) operated by or for at least one social network 718. By way of example but not limitation, at least one server device (e.g., an actual or virtual server of a cloud service such as Apple's iCloud) may retrieve at least one indication of personal relation for at least one authorized user from at least a part of one or more servers operated by or for at least one social network (e.g., from one or more servers operated for or by Classmates[dot]com). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 8L illustrates a flow diagram 800L having example operations 892, 894, 896, 897, 898, or 899. For certain example embodiments, an operation 892 may be directed at least partially to wherein the inferring at least one indication

of personal relation for at least one authorized user via at least one user-device interaction (of operation **802**) comprises obtaining the at least one indication of personal relation for the at least one authorized user via at least one social networking user-device interaction from at least one social network application. For certain example implementations, at least one device may obtain at least one indication **706** of personal relation for at least one authorized user via at least one social networking user-device interaction **710** from (e.g., directly from, from data stored by, by querying, a combination thereof, etc.) at least one social network application **722** (e.g., a mobile or desktop application stored at, executing on, a combination thereof, etc. a user device **102** or an application that is separate from or at least partially integrated with an OS of a user device **102**). By way of example but not limitation, code executing on a server (e.g., a server device **112(2)** of FIG. 7B) may obtain at least one indication of personal relation for at least one authorized user via at least one social networking user-device interaction (e.g., a message sent via Facebook) from at least one social network application (e.g., a Facebook application). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **894** may be directed at least partially to wherein the obtaining the at least one indication of personal relation for the at least one authorized user via at least one social networking user-device interaction from at least one social network application (of operation **892**) comprises obtaining the at least one indication of personal relation for the at least one authorized user via the at least one social networking user-device interaction from at least one social network mobile application. For certain example implementations, at least one device may obtain at least one indication of personal relation **706** for at least one authorized user via at least one social networking user-device interaction **710** from at least one social network mobile application **722**. By way of example but not limitation, a module of a mobile device operating system (e.g., at least a portion of an Android OS on an HTC smart phone) may obtain at least one indication of personal relation for at least one authorized user via at least one social networking user-device interaction (e.g., a message received via Facebook) from at least one social network mobile application (e.g., a Facebook Android application enhanced for tablet viewing). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **896** may be directed at least partially to wherein the inferring at least one indication of personal relation for at least one authorized user via at least one user-device interaction (of operation **802**) comprises obtaining the at least one indication of personal relation for the at least one authorized user via at least one communication-related user-device interaction from at least one communication. For certain example implementations, at least one device may obtain at least one indication **706** of personal relation (e.g., a listing of in-laws living in the same state or contact information for a babysitter or attorney) for at least one authorized user via at least one communication-related user-device interaction **710** from at least one communication **724** (e.g., a text message, a phone call, an email, a social network communication, a transcribed video call, a chat, a combination thereof, etc. having or accompanying or being linked to an implicit or an explicit statement or implication of personal relationship). By way of example but not limitation, a cloud-based payment authorization service (e.g., Google Wallet) may obtain at least one indication of personal relation for at least one authorized user via at least one com-

munication-related user-device interaction from at least one communication (e.g., an identity of a housekeeper may be obtained from an outgoing text message). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **897** may be directed at least partially to wherein the obtaining the at least one indication of personal relation for the at least one authorized user via at least one communication-related user-device interaction from at least one communication (of operation **896**) comprises obtaining the at least one indication of personal relation for the at least one authorized user via at least one social networking user-device interaction from at least one social network communication. For certain example implementations, at least one device may obtain at least one indication of personal relation **706** for at least one authorized user via at least one social networking user-device interaction from at least one social network communication (e.g., a message, a tweet, a post, a pin, a picture, a video, wall writing, streamed items, news items, a continuous or intermittent transmission or reception of information to or from a social network, a combination thereof, etc.). By way of example but not limitation, a cloud-based payment authorization service (e.g., PayPal) may obtain at least one indication of personal relation (e.g., a new addition to a family) for at least one authorized user via at least one social networking user-device interaction from at least one social network communication (e.g., PayPal may obtain a name or existence of a new child for a customer responsive to a tweeted birth announcement). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **898** may be directed at least partially to wherein the inferring at least one indication of personal relation for at least one authorized user via at least one user-device interaction (of operation **802**) comprises obtaining the at least one indication of personal relation for the at least one authorized user via at least one social networking user-device interaction from at least one membership grouping of at least one social network. For certain example implementations, at least one device may obtain at least one indication **706** of personal relation for at least one authorized user via at least one social networking user-device interaction **710** from at least one membership grouping (e.g., a set or list—such as a circle or posting group—of social network members that are publicly or privately identified by at least one social network member as being related, as having something in common, as being addressable together for incoming or outgoing communications, as being appropriate for joint handling of associated social network communications, a combination thereof, etc.) of at least one social network. By way of example but not limitation, an internet or cloud-based payment service (e.g., an Intuit payment service) may obtain at least one indication of personal relation for at least one authorized user via at least one social networking user-device interaction from at least one membership grouping (e.g., a Facebook grouping that is labeled, tagged, or otherwise indicated to be related to a family unit or familial relations) of at least one social network (e.g., Facebook). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **899** may be directed at least partially to wherein the obtaining the at least one indication of personal relation for the at least one authorized user via at least one social networking user-device interaction from at least one membership grouping of at least one social network (of operation **898**) comprises obtaining

the at least one indication of personal relation for the at least one authorized user via the at least one social networking user-device interaction from at least one circle of social network members that is designated to relate to family. For certain example implementations, at least one device may obtain at least one indication of personal relation **706** for at least one authorized user via at least one social networking user-device interaction **710** from at least one circle (e.g., a, defined, identified, selected, organized, a combination thereof, etc. set) of social network members (e.g., entities that have joined or have an account with a social network) that is designated to relate to family. By way of example but not limitation, an app executing on a user device (e.g., a Lookout security app for Android OS) may obtain at least one indication of personal relation for at least one authorized user via at least one social networking user-device interaction from at least one circle of social network members (e.g., a Google+ Circle) that is designated to relate to family (e.g., one that is titled "immediate family", described as "extended family" or "kids" or "parents", a combination thereof, etc.). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIGS. **9A-9G** depict example additions or alternatives for a flow diagram of FIG. **8A** in accordance with certain example embodiments. As illustrated, flow diagrams of FIGS. **9A-9G** may include any of the illustrated or described operations. Although operations are shown or described in a particular order or with a particular relationship to one or more other operations, it should be understood that methods may be performed in alternative manners without departing from claimed subject matter, including, but not limited to, with a different order or number of operations or with a different relationship between or among operations (e.g., operations that are illustrated as nested blocks are not necessarily subsidiary operations and may instead be performed independently). Also, at least some operation(s) of flow diagrams of FIGS. **9A-9G** may be performed so as to be fully or partially overlapping with other operation(s).

FIG. **9A** illustrates a flow diagram **900A** having example operations **908**, **910**, **911**, **912**, or **914**. For certain example embodiments, an operation **908** may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation **804**) comprises adding the at least one indication of personal relation to the at least one behavioral fingerprint that is associated with the at least one authorized user. For certain example implementations, at least one device may add (e.g., augment, insert, include, supplement, append, join together, a combination thereof, etc.) at least one indication of personal relation **706** to at least one behavioral fingerprint **110** that is associated with at least one authorized user. By way of example but not limitation, an internet or cloud-based security service may add at least one indication of personal relation (e.g., an Apple iCloud server may insert an identification of a child) to at least one behavioral fingerprint that is associated with at least one authorized user (e.g., a behavioral fingerprint portion of an Apple ID profile stored at an Apple server farm). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **910** may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one

authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation **804**) comprises updating the at least one behavioral fingerprint that is associated with the at least one authorized user with the at least one indication of personal relation. For certain example implementations, at least one device may update (e.g., replace a previous entry, modify a previous entry, remove at least part of a previous entry, connect, affix, a combination thereof, etc.) at least one behavioral fingerprint **110** that is associated with at least one authorized user with at least one indication **706** of personal relation. By way of example but not limitation, an internet or cloud-based security service may update (e.g., an Apple iCloud server may change a child named "Pat" from being designated a son to being designated a daughter) at least one behavioral fingerprint that is associated with at least one authorized user (e.g., a behavioral fingerprint portion of an Apple ID profile stored at a user's iPhone) with at least one indication of personal relation (e.g., an indication that a user's child named "Pat" has just joined "Curves"). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **911** may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation **804**) comprises deleting at least a portion of the at least one behavioral fingerprint that is associated with the at least one authorized user based at least partially on the at least one indication of personal relation. For certain example implementations, at least one device may delete (e.g., remove, excise, write over, replace with something new, a combination thereof, etc.) at least a portion of at least one behavioral fingerprint **110** that is associated with at least one authorized user based at least partially on at least one indication of personal relation **706**. By way of example but not limitation, an internet or cloud-based service may delete (e.g., a Microsoft-Azure based cloud service may remove) at least a portion of at least one behavioral fingerprint that is associated with at least one authorized user based at least partially on the at least one indication of personal relation (e.g., may remove a spousal family relationship from a behavioral fingerprint based at least partially on a Facebook post indicating that a divorce has occurred). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **912** may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation **804**) comprises confirming that the at least one behavioral fingerprint that is associated with the at least one authorized user includes the at least one indication of personal relation. For certain example implementations, at least one device may confirm (e.g., compare at least one newly-received family relation indication to one or more existing family relation designations) that at least one behavioral fingerprint **110** that is associated with at least one authorized user includes at least one indication of personal relation **706**. By way of example but not limitation, a cloud-type service (e.g., a Google service such as Google Wallet) may confirm that at least one behav-

ioral fingerprint that is associated with at least one authorized user includes at least one indication of personal relation (e.g., verify that an obtained indication of sibling status exists or matches a current personal relation designation in a Google Wallet security profile). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **914** may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation **804**) comprises establishing between or among one or more individuals at least one linkage that reflects at least one familial relation in the at least one behavioral fingerprint that is associated with the at least one authorized user based, at least partially, on the at least one indication of personal relation. For certain example implementations, at least one device may establish (e.g., set-up, create, organize, provide, set-forth, a combination thereof, etc.) between or among one or more individuals (e.g., people, persons, social network members, other entities, a combination thereof, etc.) at least one linkage (e.g., a reference, a vector, an arrow, a family tree indicator, a pointer, a combination thereof, etc.) that reflects (e.g., represents, indicates, defines, explains, a combination thereof, etc.) at least one familial relation in at least one behavioral fingerprint **110** that is associated with at least one authorized user based, at least partially, on at least one indication of personal relation **706**. By way of example but not limitation, an operating system feature (e.g., a function of a Google Android OS of an HTC smartphone) may establish between or among one or more individuals at least one linkage that reflects at least one familial relation (e.g., may create a reference between a user and another individual with the reference representing a parental relationship) in at least one behavioral fingerprint (e.g., in a security or other user-related file on the HTC smartphone) that is associated with at least one authorized user based, at least partially, on at least one indication of personal relation. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 9B illustrates a flow diagram **900B** having example operations **918**, **920**, or **922**. For certain example embodiments, an operation **918** may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation **804**) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of accessing one or more user devices by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication of personal relation **706** into at least one behavioral fingerprint **110** that is associated with at least one authorized user, with at least one behavioral fingerprint **110** including one or more indicators **708** of accessing (e.g., changing settings, entering a password, executing apps, using OS features, communicating with, a combination thereof, etc.) one or more user devices **102** by the at least one authorized user. By way of example but not limitation, an app on a user device (e.g., an app on a RIM Blackberry) may

incorporate at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of accessing one or more user devices by the at least one authorized user (e.g., indicator(s) that a particular user has executed a particular app or has regularly changed brightness settings). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **920** may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation **804**) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of interacting with one or more user devices by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication **706** of personal relation into at least one behavioral fingerprint **110** that is associated with at least one authorized user, with at least one behavioral fingerprint **110** including one or more indicators **708** of interacting with (e.g., manipulating, controlling I/O functions, working a user interface (UI), playing games, creating files, producing documents, a combination thereof, etc.) one or more user devices **102** by the at least one authorized user. By way of example but not limitation, a shell on a smartphone (e.g., an HTC Sense UI or Touch Sense UI) may incorporate at least one indication of personal relation (e.g., an indication that another user of a device is a spouse) into at least one behavioral fingerprint that is associated with at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of interacting with one or more user devices by the at least one authorized user (e.g., one or more indicators that a user has played certain games on a user device). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **922** may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation **804**) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of movement of one or more user devices by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication of personal relation **706** into at least one behavioral fingerprint **110** that is associated with at least one authorized user, with at least one behavioral fingerprint **110** including one or more indicators **708** of movement (e.g., shaking movements, movements resulting from being carried from place to place, movements while being carried from place to place, movements while a person walks or runs, movement while a person rides on a form of transportation, a combination thereof, etc.) of one or more user devices **102** by the at least one authorized user. By way of example but not limitation, an app that enables point of sale purchases (e.g., a Dunkin Donuts app)

may incorporate at least one indication of personal relation into at least one behavioral fingerprint that is associated with at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of movement of one or more user devices by the at least one authorized user (e.g., a Dunkin Donuts app can include indicators of which Dunkin Donut locations a user patronizes or what form of transportation—such as on foot or on a train—a user relies on to reach a given location). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 9C illustrates a flow diagram 900C having example operations 924, 926, or 928. For certain example embodiments, an operation 924 may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation 804) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of providing input to one or more user devices by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication of personal relation 706 into at least one behavioral fingerprint 110 that is associated with at least one authorized user, with at least one behavioral fingerprint 110 including one or more indicators 708 of providing input (e.g., controlling a device via a UI, speaking into a microphone, touching a screen with at least one finger, swiping a screen with one or more fingers, pressing buttons, a combination thereof etc.) to one or more user devices 102 by the at least one authorized user. By way of example but not limitation, a retailer with a web presence (e.g., Walmart) may incorporate at least one indication of personal relation into at least one behavioral fingerprint that is associated with at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of providing input to one or more user devices by the at least one authorized user (e.g., a Walmart server—such as after an app from Walmart on a user device sends at least one personal relation indication to the Walmart server—may incorporate the at least one personal relation indication into a behavioral fingerprint that includes at least one user input characteristic, such as an indication of how a user swipes between pages or other visual screens on a user device). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 926 may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation 804) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of receiving output from one or more user devices by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication of personal relation 706 into at least one behavioral fingerprint 110 that is associated with at least one authorized user, with at least one behavioral fingerprint 110 including one or more

indicators 708 of receiving output from (e.g., images displayed on a device screen, sounds played from a speaker, a combination thereof, etc.) one or more user devices 102 by the at least one authorized user. By way of example but not limitation, a cloud server (e.g., a virtual server of a payment services company that leases server resources from a computing resources wholesaler, such as Amazon's Elastic Compute Cloud (ECC)) may incorporate at least one indication of personal relation into at least one behavioral fingerprint that is associated with at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of receiving output from one or more user devices by the at least one authorized user (e.g., a virtual server of a payment services company may incorporate at least one personal relation indication into a behavioral fingerprint that includes at least one user output characteristic, such as volume levels used for phone calls and internet videos by a user). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 928 may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation 804) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of communicating via one or more user devices by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication 706 of personal relation into at least one behavioral fingerprint 110 that is associated with at least one authorized user, with at least one behavioral fingerprint 110 including one or more indicators 708 of communicating (e.g., indicators of how a user communicates—such as via text messaging, phone, email, a special app such as iMessage or Facetime, or video calling; indicators of to whom a user communicates—such as people or groups; indicators of when a user communicates; a combination thereof, etc.) via one or more user devices 102 by the at least one authorized user. By way of example but not limitation, a cloud security service that monitors a user device (e.g., a Trend Micro security suite that monitors device usage at least partially from a location remote from the user device) may incorporate at least one indication of personal relation into at least one behavioral fingerprint that is associated with at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of communicating via one or more user devices by the at least one authorized user (e.g., a Trend Micro server may incorporate at least one personal relation indication into a behavioral fingerprint that includes an indicator of what times and days of week a user calls his mother). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 9D illustrates a flow diagram 900D having example operations 930 or 932. For certain example embodiments, an operation 930 may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation 804) comprises incorporating the at least one indication of personal relation into at least one behavioral

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fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of software application execution on one or more user devices by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication of personal relation **706** into at least one behavioral fingerprint **110** that is associated with at least one authorized user, with at least one behavioral fingerprint **110** including one or more indicators **708** of software application (e.g., app, program, code, a combination thereof, etc.) execution (e.g., at least one indicator of which apps are launched or run, how long apps are interacted with, a placement of app windows on a display screen, when apps are launched, a combination thereof, etc.) on one or more user devices **102** by the at least one authorized user. By way of example but not limitation, an app or feature with near-field communication (NFC) capabilities (e.g., an app or iOS feature on an Apple iPhone) may incorporate at least one indication of personal relation into at least one behavioral fingerprint that is associated with at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of software application execution on one or more user devices by the at least one authorized user (e.g., an app or iOS feature of an iPhone may incorporate at least one personal relation indication into a behavioral fingerprint that includes at least one app execution characteristic, such as how often a user accesses a Safari browser). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **932** may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation **804**) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of effecting at least one transaction via one or more user devices by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication of personal relation **706** into at least one behavioral fingerprint **110** that is associated with at least one authorized user, with at least one behavioral fingerprint **110** including one or more indicators **708** of effecting at least one transaction (e.g., conducting, initiating, concluding, providing authorization, providing a source of funds, a combination thereof, etc. at least one purchase, order, procurement, exchange of consideration, a combination thereof, etc.) via one or more user devices **102** by the at least one authorized user. By way of example but not limitation, a cloud component of a payment service (e.g., at least one server operated by or for PayPal) may incorporate at least one indication of personal relation into at least one behavioral fingerprint that is associated with at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of effecting at least one transaction via one or more user devices (e.g., a server of PayPal may incorporate at least one personal relation indication into a behavioral fingerprint that includes at least one transaction characteristic, such as a vendor—e.g., Staples—that has been used before or an item category—e.g., ski equipment—that has been purchased from before) by the at least one authorized user. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

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FIG. **9E** illustrates a flow diagram **900E** having example operations **938** or **940**. For certain example embodiments, an operation **938** may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation **804**) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of at least one user habit with respect to one or more user devices by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication of personal relation **706** into at least one behavioral fingerprint **110** that is associated with at least one authorized user, with at least one behavioral fingerprint **110** including one or more indicators **708** of at least one user habit (e.g., at least one act that is repeated at certain times of the day, on certain days of the week, in a certain manner, at a certain location, a combination thereof, etc.) with respect to one or more user devices **102** by the at least one authorized user. By way of example but not limitation, a retail app (e.g., an app by McDonald's) may incorporate at least one indication of personal relation into at least one behavioral fingerprint that is associated with at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of at least one user habit (e.g., an app executing on a user device may incorporate at least one personal relation indication into a behavioral fingerprint—which behavioral fingerprint may be located on a user device or at a remote server device—that includes at least one indicator of (i) an act—e.g., a purchase of a Big Mac with cheese and a small fry and soft drink—that occurs every Tuesday and Thursday or (ii) an act—e.g., texting a spouse—that occurs every weekday between 10 and 10:30 am) with respect to one or more user devices (e.g., a Nokia Lumia phone is executing an app that enables purchases at McDonald's using the phone) by the at least one authorized user. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation **940** may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of at least one user habit with respect to one or more user devices by the at least one authorized user, (of operation **938**) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of at least one user act that is repeated with respect to one or more user devices by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication **706** of personal relation into at least one behavioral fingerprint **110** that is associated with at least one authorized user, with at least one behavioral fingerprint **110** including one or more indicators **708** of at least one user act (e.g., viewing a series of three websites every Saturday and Sunday starting between 9:00 and 9:30 am) that is repeated with respect to one or more user devices **102** by the at least one authorized user. By way of example but not limitation, an OS of a mobile device (e.g., an Apple iOS) may incorporate at

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least one indication of personal relation into at least one behavioral fingerprint that is associated with at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of at least one user act (e.g., an iPhone or iPad may incorporate at least one personal relation indication into a behavioral fingerprint that includes at least one repeated user act, such as using an iOS device to navigate to a lunch location each weekday starting at 11:00 am) that is repeated with respect to one or more user devices by the at least one authorized user. However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 9F illustrates a flow diagram 900F having example operations 944, 946, 948, or 950. For certain example embodiments, an operation 944 may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation 804) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of observed usage of one or more user devices by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication of personal relation 706 into at least one behavioral fingerprint 110 that is associated with at least one authorized user, with at least one behavioral fingerprint 110 including one or more indicators 708 of observed usage (e.g., user interaction with, communication modes employed, apps employed, transactions conducted, social network interactions carried out, a combination thereof, etc.) of one or more user devices 102 by the at least one authorized user. By way of example but not limitation, a security app on a user device (e.g., a Symantec mobile security app) may incorporate at least one indication of personal relation into at least one behavioral fingerprint that is associated with at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of observed usage of one or more user devices by the at least one authorized user (e.g., a mobile device executing a Symantec mobile security app may incorporate at least one personal relation indication into a behavioral fingerprint that includes at least one user act, such as a list of social network members contacted via at least one social network with the mobile device). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 946 may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of observed usage of one or more user devices by the at least one authorized user, (of operation 944) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that includes one or more indicators of apps employed by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication of personal relation 706 into at least one behavioral fingerprint 110 that includes one or more indicators 708 of apps employed (e.g., an identification of an app, a chronological listing of apps used each day, a duration of interaction for each app, a number of uses per day for a number of apps,

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a quality of play for a given app, features utilized for a particular app, a list of people contacted with a particular app, a combination thereof, etc.) by at least one authorized user. By way of example but not limitation, a desktop user device (e.g., an Apple iMac or an HP personal computer (PC)) may incorporate at least one indication of personal relation into at least one behavioral fingerprint that includes one or more indicators of apps employed by at least one authorized user (e.g., an OS feature of an iMac, such as a feature of OS X, or of an HP PC, such as a feature of Microsoft Windows 8, may incorporate at least one personal relation indication into a behavioral fingerprint that indicates that Microsoft Office is open or running each day from about 8:00 am to 3:00 pm). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 948 may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of observed usage of one or more user devices by the at least one authorized user, (of operation 944) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that includes one or more indicators of transactions conducted by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication of personal relation 706 into at least one behavioral fingerprint 110 that includes one or more indicators 708 of transactions conducted (e.g., a purchase, an order, a procurement, an exchange of consideration, a combination thereof, etc. that is initiated, concluded, authorized, financed, consummated, a combination thereof, etc.) by at least one authorized user. By way of example but not limitation, a payment authorization cloud service (e.g., an Amazon cloud service for authorizing payments for purchases made through Amazon via a user device) may incorporate at least one indication of personal relation into at least one behavioral fingerprint that includes one or more indicators of transactions conducted by the at least one authorized user (e.g., an Android user device that is in communication with an Amazon server may incorporate at least one personal relation indication into a behavioral fingerprint that includes a list of previous transactions made through Amazon or made with the Android user device). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 950 may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of observed usage of one or more user devices by the at least one authorized user, (of operation 944) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that includes one or more indicators of social network interactions by the at least one authorized user. For certain example implementations, at least one device may incorporate at least one indication of personal relation 706 into at least one behavioral fingerprint 110 that includes one or more indicators 708 of social network interactions (e.g., social networks logged into or otherwise accessed, social network members contacted, types of social network communication modes employed, times of social network use, social network apps used, games played via a social network, a combination thereof, etc.) by at least one authorized user. By way of example but not limita-

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tion, a payment authorization service (e.g., a bank debit card service) that is realized at least partially in a cloud environment may incorporate at least one indication of personal relation into at least one behavioral fingerprint that includes one or more indicators of social network interactions by at least one authorized user (e.g., a Bank of America service that monitors social network interactions of an authorized user may incorporate at least one personal relation indication into a behavioral fingerprint that indicates that the authorized user frequently posts to a particular neighbor's Facebook wall each day between lunch and dinner). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

FIG. 9G illustrates a flow diagram 900G having example operations 954 or 956. For certain example embodiments, an operation 954 may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of utilization of one or more user devices by the at least one authorized user, (of operation 804) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of at least one observed action by the at least one authorized user with regard to one or more user devices. For certain example implementations, at least one device may incorporate at least one indication of personal relation 706 into at least one behavioral fingerprint 110 that is associated with at least one authorized user, with at least one behavioral fingerprint 110 including one or more indicators 708 of at least one observed action by the at least one authorized user (e.g., a UI action, a user movement, a location visited by a user, a user status alert, an interaction with an online entity or internet location (e.g., playing an online game, engaging in an online betting activity, contacting a social-networking entity, streaming a movie, a combination thereof, etc.), a combination thereof, etc.) with regard to one or more user devices 102. By way of example but not limitation, an app for a user device that enables at least semi-automatic unlocking of real-world objects (e.g., a car or house door based at least partially on proximity of the user device) may incorporate at least one indication of personal relation into at least one behavioral fingerprint that is associated with at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of at least one observed action by the at least one authorized user with regard to one or more user devices (e.g., one or more of the user devices may be executing a locking/unlocking app that may incorporate at least one personal relation indication into a behavioral fingerprint that includes at least one indicator of how a user navigates between apps or at least one indicator of how long a user keeps a user device in motion before a particular door is to be unlocked). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

For certain example embodiments, an operation 956 may be directed at least partially to wherein the incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one authorized user, the at least one behavioral fingerprint including one or more indicators of at least one observed action by the at least one authorized user with regard to one or more user devices, (of operation 954) comprises incorporating the at least one indication of personal relation into at least one behavioral fingerprint that is associated with the at least one

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authorized user, the at least one behavioral fingerprint including one or more indicators of at least one location visited by the at least one authorized user with regard to one or more user devices. For certain example implementations, at least one device may incorporate at least one indication of personal relation 706 into at least one behavioral fingerprint 110 that is associated with at least one authorized user, with at least one behavioral fingerprint 110 including one or more indicators 708 of at least one location visited (e.g., a virtual location—such as a website or virtual world or location thereof; a physical location—such as an address, coordinates, or an identifiable place like a neighborhood or friend's home; a combination thereof, etc.) by the at least one authorized user with regard to one or more user devices. By way of example but not limitation, an OS of a Sony PC (e.g., Microsoft's Windows 8 of a Sony Vaio) may incorporate at least one indication of personal relation into at least one behavioral fingerprint that is associated with at least one authorized user, with the at least one behavioral fingerprint including one or more indicators of at least one location visited by the at least one authorized user with regard to one or more user devices (e.g., an OS having security features, which may expose an authentication API to an app, may incorporate at least one personal relation indication into a behavioral fingerprint that includes a list of a person's daily destinations to which a user device is carried). However, claimed subject matter is not limited to any particular described embodiments, implementations, examples, etc.

Those skilled in the art will appreciate that the foregoing specific exemplary processes and/or devices and/or technologies are representative of more general processes and/or devices and/or technologies taught elsewhere herein, such as in the claims filed herewith and/or elsewhere in the present application.

Those having skill in the art will recognize that the state of the art has progressed to the point where there is little distinction left between hardware, software, and/or firmware implementations of aspects of systems; the use of hardware, software, and/or firmware is generally (but not always, in that in certain contexts the choice between hardware and software can become significant) a design choice representing cost vs. efficiency tradeoffs. Those having skill in the art will appreciate that there are various vehicles by which processes and/or systems and/or other technologies described herein can be effected (e.g., hardware, software, and/or firmware), and that the preferred vehicle will vary with the context in which the processes and/or systems and/or other technologies are deployed. For example, if an implementer determines that speed and accuracy are paramount, the implementer may opt for a mainly hardware and/or firmware vehicle; alternatively, if flexibility is paramount, the implementer may opt for a mainly software implementation; or, yet again alternatively, the implementer may opt for some combination of hardware, software, and/or firmware. Hence, there are several possible vehicles by which the processes and/or devices and/or other technologies described herein may be effected, none of which is inherently superior to the other in that any vehicle to be utilized is a choice dependent upon the context in which the vehicle will be deployed and the specific concerns (e.g., speed, flexibility, or predictability) of the implementer, any of which may vary. Those skilled in the art will recognize that optical aspects of implementations will typically employ optically-oriented hardware, software, and/or firmware.

In some implementations described herein, logic and similar implementations may include software or other control structures. Electronic circuitry, for example, may have one or more paths of electrical current constructed and arranged to

implement various functions as described herein. In some implementations, one or more media may be configured to bear a device-detectable implementation when such media hold or transmit device detectable instructions operable to perform as described herein. In some variants, for example, implementations may include an update or modification of existing software or firmware, or of gate arrays or programmable hardware, such as by performing a reception of or a transmission of one or more instructions in relation to one or more operations described herein. Alternatively or additionally, in some variants, an implementation may include special-purpose hardware, software, firmware components, and/or general-purpose components executing or otherwise invoking special-purpose components. Specifications or other implementations may be transmitted by one or more instances of tangible transmission media as described herein, optionally by packet transmission or otherwise by passing through distributed media at various times.

Alternatively or additionally, implementations may include executing a special-purpose instruction sequence or invoking circuitry for enabling, triggering, coordinating, requesting, or otherwise causing one or more occurrences of virtually any functional operations described herein. In some variants, operational or other logical descriptions herein may be expressed as source code and compiled or otherwise invoked as an executable instruction sequence. In some contexts, for example, implementations may be provided, in whole or in part, by source code, such as C++, or other code sequences. In other implementations, source or other code implementation, using commercially available and/or techniques in the art, may be compiled/implemented/translated/converted into a high-level descriptor language (e.g., initially implementing described technologies in C or C++ programming language and thereafter converting the programming language implementation into a logic-synthesizable language implementation, a hardware description language implementation, a hardware design simulation implementation, and/or other such similar mode(s) of expression). For example, some or all of a logical expression (e.g., computer programming language implementation) may be manifested as a Verilog-type hardware description (e.g., via Hardware Description Language (HDL) and/or Very High Speed Integrated Circuit Hardware Descriptor Language (VHDL)) or other circuitry model which may then be used to create a physical implementation having hardware (e.g., an Application Specific Integrated Circuit). Those skilled in the art will recognize how to obtain, configure, and optimize suitable transmission or computational elements, material supplies, actuators, or other structures in light of these teachings.

The foregoing detailed description has set forth various embodiments of the devices and/or processes via the use of block diagrams, flowcharts, and/or examples. Insofar as such block diagrams, flowcharts, and/or examples contain one or more functions and/or operations, it will be understood by those within the art that each function and/or operation within such block diagrams, flowcharts, or examples can be implemented, individually and/or collectively, by a wide range of hardware, software, firmware, or virtually any combination thereof. In one embodiment, several portions of the subject matter described herein may be implemented via Application Specific Integrated Circuits (ASICs), Field Programmable Gate Arrays (FPGAs), digital signal processors (DSPs), or other integrated formats. However, those skilled in the art will recognize that some aspects of the embodiments disclosed herein, in whole or in part, can be equivalently implemented in integrated circuits, as one or more computer programs running on one or more computers (e.g., as one or more

programs running on one or more computer systems), as one or more programs running on one or more processors (e.g., as one or more programs running on one or more microprocessors), as firmware, or as virtually any combination thereof, and that designing the circuitry and/or writing the code for the software and/or firmware would be well within the skill of one of skill in the art in light of this disclosure. In addition, those skilled in the art will appreciate that the mechanisms of the subject matter described herein are capable of being distributed as a program product in a variety of forms, and that an illustrative embodiment of the subject matter described herein applies regardless of the particular type of signal bearing medium used to actually carry out the distribution. Examples of a signal bearing medium include, but are not limited to, the following: a recordable type medium such as a floppy disk, a hard disk drive, a Compact Disc (CD), a Digital Video Disk (DVD), a digital tape, a computer memory, etc.; and a transmission type medium such as a digital and/or an analog communication medium (e.g., a fiber optic cable, a waveguide, a wired communications link, a wireless communication link (e.g., transmitter, receiver, transmission logic, reception logic, etc.), etc.).

In a general sense, those skilled in the art will recognize that the various aspects described herein which can be implemented, individually and/or collectively, by a wide range of hardware, software, firmware, and/or any combination thereof can be viewed as being composed of various types of “electrical circuitry.” Consequently, as used herein “electrical circuitry” includes, but is not limited to, electrical circuitry having at least one discrete electrical circuit, electrical circuitry having at least one integrated circuit, electrical circuitry having at least one application specific integrated circuit, electrical circuitry forming a general purpose computing device configured by a computer program (e.g., a general purpose computer configured by a computer program which at least partially carries out processes and/or devices described herein, or a microprocessor configured by a computer program which at least partially carries out processes and/or devices described herein), electrical circuitry forming a memory device (e.g., forms of memory (e.g., random access, flash, read only, etc.)), and/or electrical circuitry forming a communications device (e.g., a modem, communications switch, optical-electrical equipment, etc.). Those having skill in the art will recognize that the subject matter described herein may be implemented in an analog or digital fashion or some combination thereof.

Those skilled in the art will recognize that at least a portion of the devices and/or processes described herein can be integrated into a data processing system. Those having skill in the art will recognize that a data processing system generally includes one or more of a system unit housing, a video display device, memory such as volatile or non-volatile memory, processors such as microprocessors or digital signal processors, computational entities such as operating systems, drivers, graphical user interfaces, and applications programs, one or more interaction devices (e.g., a touch pad, a touch screen, an antenna, etc.), and/or control systems including feedback loops and control motors (e.g., feedback for sensing position and/or velocity; control motors for moving and/or adjusting components and/or quantities). A data processing system may be implemented utilizing suitable commercially available components, such as those typically found in data computing/communication and/or network computing/communication systems.

For the purposes of this application, “cloud” computing may be understood as described in the cloud computing literature. For example, cloud computing may be methods and/

or systems for the delivery of computational capacity and/or storage capacity as a service. The “cloud” may refer to one or more hardware and/or software components that deliver or assist in the delivery of computational and/or storage capacity, including, but not limited to, one or more of a client, an application, a platform, an infrastructure, and/or a server. The cloud may refer to any of the hardware and/or software associated with a client, an application, a platform, an infrastructure, and/or a server. For example, cloud and cloud computing may refer to one or more of a computer, a processor, a storage medium, a router, a switch, a modem, a virtual machine (e.g., a virtual server), a data center, an operating system, a middleware, a firmware, a hardware back-end, a software back-end, and/or a software application. A cloud may refer to a private cloud, a public cloud, a hybrid cloud, and/or a community cloud. A cloud may be a shared pool of configurable computing resources, which may be public, private, semi-private, distributable, scaleable, flexible, temporary, virtual, and/or physical. A cloud or cloud service may be delivered over one or more types of network, e.g., a mobile communication network, and the Internet.

As used in this application, a cloud or a cloud service may include one or more of infrastructure-as-a-service (“IaaS”), platform-as-a-service (“PaaS”), software-as-a-service (“SaaS”), and/or desktop-as-a-service (“DaaS”). As a non-exclusive example, IaaS may include, e.g., one or more virtual server instantiations that may start, stop, access, and/or configure virtual servers and/or storage centers (e.g., providing one or more processors, storage space, and/or network resources on-demand, e.g., EMC and Rackspace). PaaS may include, e.g., one or more software and/or development tools hosted on an infrastructure (e.g., a computing platform and/or a solution stack from which the client can create software interfaces and applications, e.g., Microsoft Azure). SaaS may include, e.g., software hosted by a service provider and accessible over a network (e.g., the software for the application and/or the data associated with that software application may be kept on the network, e.g., Google Apps, Salesforce). DaaS may include, e.g., providing desktop, applications, data, and/or services for the user over a network (e.g., providing a multi-application framework, the applications in the framework, the data associated with the applications, and/or services related to the applications and/or the data over the network, e.g., Citrix). The foregoing is intended to be exemplary of the types of systems and/or methods referred to in this application as “cloud” or “cloud computing” and should not be considered complete or exhaustive.

Those skilled in the art will recognize that it is common within the art to implement devices and/or processes and/or systems, and thereafter use engineering and/or other practices to integrate such implemented devices and/or processes and/or systems into more comprehensive devices and/or processes and/or systems. That is, at least a portion of the devices and/or processes and/or systems described herein can be integrated into other devices and/or processes and/or systems via a reasonable amount of experimentation. Those having skill in the art will recognize that examples of such other devices and/or processes and/or systems might include—as appropriate to context and application—all or part of devices and/or processes and/or systems of (a) an air conveyance (e.g., an airplane, rocket, helicopter, etc.), (b) a ground conveyance (e.g., a car, truck, locomotive, tank, armored personnel carrier, etc.), (c) a building (e.g., a home, warehouse, office, etc.), (d) an appliance (e.g., a refrigerator, a washing machine, a dryer, etc.), (e) a communications system (e.g., a networked system, a telephone system, a Voice over IP system, etc.), (f) a business entity (e.g., an Internet Service Provider (ISP)

entity such as Comcast Cable, Qwest, Southwestern Bell, etc.), or (g) a wired/wireless services entity (e.g., Sprint, Cingular, Nextel, etc.), etc.

In certain cases, use of a system or method may occur in a territory even if components are located outside the territory. For example, in a distributed computing context, use of a distributed computing system may occur in a territory even though parts of the system may be located outside of the territory (e.g., relay, server, processor, signal-bearing medium, transmitting computer, receiving computer, etc. located outside the territory). A sale of a system or method may likewise occur in a territory even if components of the system or method are located and/or used outside the territory. Further, implementation of at least part of a system for performing a method in one territory does not preclude use of the system in another territory.

One skilled in the art will recognize that the herein described components (e.g., operations), devices, objects, and the discussion accompanying them are used as examples for the sake of conceptual clarity and that various configuration modifications are contemplated. Consequently, as used herein, the specific exemplars set forth and the accompanying discussion are intended to be representative of their more general classes. In general, use of any specific exemplar is intended to be representative of its class, and the non-inclusion of specific components (e.g., operations), devices, and objects should not be taken limiting.

With respect to the use of substantially any plural and/or singular terms herein, those having skill in the art can translate from the plural to the singular and/or from the singular to the plural as is appropriate to the context and/or application. The various singular/plural permutations are not expressly set forth herein for sake of clarity.

The herein described subject matter sometimes illustrates different components contained within, or connected with, different other components. It is to be understood that such depicted architectures are merely exemplary, and that in fact many other architectures may be implemented which achieve the same functionality. In a conceptual sense, any arrangement of components to achieve the same functionality is effectively “associated” such that the desired functionality is achieved. Hence, any two components herein combined to achieve a particular functionality can be seen as “associated with” each other such that the desired functionality is achieved, irrespective of architectures or intermedial components. Likewise, any two components so associated can also be viewed as being “operably connected”, or “operably coupled,” to each other to achieve the desired functionality, and any two components capable of being so associated can also be viewed as being “operably couplable,” to each other to achieve the desired functionality. Specific examples of operably couplable include but are not limited to physically mateable and/or physically interacting components, and/or wirelessly interactable, and/or wirelessly interacting components, and/or logically interacting, and/or logically interactable components.

In some instances, one or more components may be referred to herein as “configured to,” “configured by,” “configurable to,” “operable/operative to,” “adapted/adaptable,” “able to,” “conformable/conformed to,” etc. Those skilled in the art will recognize that such terms (e.g. “configured to”) can generally encompass active-state components and/or inactive-state components and/or standby-state components, unless context requires otherwise.

This application may make reference to one or more trademarks, e.g., a word, letter, symbol, or device adopted by one manufacturer or merchant and used to identify and distin-

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guish his or her product from those of others. Trademark names used herein are set forth in such language that makes clear their identity, that distinguishes them from common descriptive nouns, that have fixed and definite meanings, and, in many if not all cases, are accompanied by other specific identification using terms not covered by trademark. In addition, trademark names used herein have meanings that are well-known and defined in the literature, and do not refer to products or compounds protected by trade secrets in order to divine their meaning. All trademarks referenced in this application are the property of their respective owners, and the appearance of one or more trademarks in this application does not diminish or otherwise adversely affect the validity of the one or more trademarks. All trademarks, registered or unregistered, that appear in this application are assumed to include a proper trademark symbol, e.g., the circle R or [trade], even when such trademark symbol does not explicitly appear next to the trademark. To the extent a trademark is used in a descriptive manner to refer to a product or process, that trademark should be interpreted to represent the corresponding product or process as of the date of the filing of this patent application.

While particular aspects of the present subject matter described herein have been shown and described, it will be apparent to those skilled in the art that, based upon the teachings herein, changes and modifications may be made without departing from the subject matter described herein and its broader aspects and, therefore, the appended claims are to encompass within their scope all such changes and modifications as are within the true spirit and scope of the subject matter described herein. It will be understood by those within the art that, in general, terms used herein, and especially in the appended claims (e.g., bodies of the appended claims) are generally intended as “open” terms (e.g., the term “including” should be interpreted as “including but not limited to,” the term “having” should be interpreted as “having at least,” the term “includes” should be interpreted as “includes but is not limited to,” etc.). It will be further understood by those within the art that if a specific number of an introduced claim recitation is intended, such an intent will be explicitly recited in the claim, and in the absence of such recitation no such intent is present. For example, as an aid to understanding, the following appended claims may contain usage of the introductory phrases “at least one” and “one or more” to introduce claim recitations. However, the use of such phrases should not be construed to imply that the introduction of a claim recitation by the indefinite articles “a” or “an” limits any particular claim containing such introduced claim recitation to claims containing only one such recitation, even when the same claim includes the introductory phrases “one or more” or “at least one” and indefinite articles such as “a” or “an” (e.g., “a” and/or “an” should typically be interpreted to mean “at least one” or “one or more”); the same holds true for the use of definite articles used to introduce claim recitations. In addition, even if a specific number of an introduced claim recitation is explicitly recited, those skilled in the art will recognize that such recitation should typically be interpreted to mean at least the recited number (e.g., the bare recitation of “two recitations,” without other modifiers, typically means at least two recitations, or two or more recitations). Furthermore, in those instances where a convention analogous to “at least one of A, B, and C, etc.” is used, in general such a construction is intended in the sense one having skill in the art would understand the convention (e.g., “a system having at least one of A, B, and C” would include but not be limited to systems that have A alone, B alone, C alone, A and B together, A and C together, B and C together, and/or A, B, and C together, etc.).

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In those instances where a convention analogous to “at least one of A, B, or C, etc.” is used, in general such a construction is intended in the sense one having skill in the art would understand the convention (e.g., “a system having at least one of A, B, or C” would include but not be limited to systems that have A alone, B alone, C alone, A and B together, A and C together, B and C together, and/or A, B, and C together, etc.). It will be further understood by those within the art that typically a disjunctive word and/or phrase presenting two or more alternative terms, whether in the description, claims, or drawings, should be understood to contemplate the possibilities of including one of the terms, either of the terms, or both terms unless context dictates otherwise. For example, the phrase “A or B” will be typically understood to include the possibilities of “A” or “B” or “A and B.”

With respect to the appended claims, those skilled in the art will appreciate that recited operations therein may generally be performed in any order. Also, although various operational flows are presented in a sequence(s), it should be understood that the various operations may be performed in other orders than those which are illustrated, or may be performed concurrently. Examples of such alternate orderings may include overlapping, interleaved, interrupted, reordered, incremental, preparatory, supplemental, simultaneous, reverse, or other variant orderings, unless context dictates otherwise. Furthermore, terms like “responsive to,” “related to,” or other past-tense adjectives are generally not intended to exclude such variants, unless context dictates otherwise.

While various aspects and embodiments have been disclosed herein, other aspects and embodiments will be apparent to those skilled in the art. The various aspects and embodiments disclosed herein are for purposes of illustration and are not intended to be limiting, with the true scope and spirit being indicated by the following claims.

What is claimed is:

1. A system, comprising:

circuitry for confirming at least one indication of an inferred familial relation associated with at least one user, the familial relation inferred at least partly based on at least one social network interaction;

circuitry for incorporating the at least one indication of an inferred familial relation into at least one behavioral fingerprint associated with the at least one user based at least partly on confirming the at least one indication of an inferred familial relation; and

circuitry for authenticating an identity of a purported authorized user in association with a purchase transaction using a mobile device associated with the at least one user based at least partly on the incorporated at least one indication of an inferred familial relation of the at least one behavioral fingerprint associated with the at least one user, including at least:

circuitry for determining an electronic address for the familial relation based at least partly on the at least one behavioral fingerprint associated with the at least one user;

circuitry for transmitting at least one message to the determined electronic address for the familial relation, the transmitted at least one message requesting confirmation that the purchase transaction using the mobile device is likely associated with the at least one user; and

circuitry for, responsive to at least one message received from the electronic address for the familial relation, authorizing the purchase transaction if the familial relation provides confirmation via the received at least

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one message that the purchase transaction using the mobile device is likely associated with the at least one user.

2. The system of claim 1, wherein circuitry for confirming at least one indication of an inferred familial relation associated with at least one user, the familial relation inferred at least partly based on at least one social network interaction comprises:

circuitry for obtaining the at least one familial relation associated with at least one user at least partly via the at least one social networking interaction.

3. The system of claim 1, wherein circuitry for authenticating an identity of a purported authorized user in association with a purchase transaction using a mobile device associated with the at least one user based at least partly on the incorporated at least one indication of an inferred familial relation of the at least one behavioral fingerprint associated with the at least one user comprises:

circuitry for detecting one or more electronic requests associated with the mobile device for one or more of delivery of at least one physical good, delivery of at least one virtual good, provision of at least one service, or pick-up of at least one physical good.

4. The system of claim 1, wherein circuitry for confirming at least one indication of an inferred familial relation associated with at least one user, the familial relation inferred at least partly based on at least one social network interaction comprises:

circuitry for accessing at least one social network profile and determining the familial relation between the at least one user and at least one entity associated with the at least one social network profile.

5. The system of claim 4, wherein circuitry for accessing at least one social network profile and determining the familial relation between the at least one user and at least one entity associated with the at least one social network profile comprises:

circuitry for accessing the at least one social network profile and determining the familial relation between the at least one user and one or more of at least one person related to the at least one user or at least one social network group of family members related to the at least one user associated with the at least one social network profile.

6. The system of claim 1, wherein circuitry for confirming at least one indication of an inferred familial relation associated with at least one user, the familial relation inferred at least partly based on at least one social network interaction comprises:

circuitry for accessing at least one social network profile and determining the familial relation between the at least one user and at least one entity associated with the at least one social network profile, the at least one social network profile including at least an indication of the familial relation.

7. The system of claim 1, wherein circuitry for confirming at least one indication of an inferred familial relation associated with at least one user, the familial relation inferred at least partly based on at least one social network interaction comprises:

circuitry for confirming at least one indication of an inferred familial relation associated with at least one user, the familial relation inferred at least partly based on monitoring one or more locations visited by at least one user, including at least receiving one or more geographic coordinates at least partially sensed by at least one GPS receiver of at least one user device associated with the at

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least one user and obtained at least partly via at least one social network app of the at least one user device.

8. The system of claim 7, further comprising:

circuitry for detecting a visitation pattern with the one or more locations visited by the at least one user and inferring the familial relation at least partly based on the detected visitation pattern.

9. The system of claim 1, wherein circuitry for confirming at least one indication of an inferred familial relation associated with at least one user, the familial relation inferred at least partly based on at least one social network interaction comprises:

circuitry for confirming the at least one indication of an inferred familial relation associated with the at least one user, the familial relation inferred at least partly based on at least one social network interaction including at least obtaining the familial relation using at least one social network app of at least one user device associated with the user as the at least one social network interaction.

10. The system of claim 9, wherein circuitry for confirming the at least one indication of an inferred familial relation associated with the at least one user, the familial relation inferred at least partly based on at least one social network interaction including at least obtaining the familial relation using at least one social network app of at least one user device associated with the user as the at least one social network interaction comprises:

circuitry for inferring the at least one indication of familial relation based at least partially on at least one recurrence pattern of one or more communications via the at least one user device associated with the user, the at least one recurrence pattern obtained at least partly via the at least one social network app of the at least one user device associated with the user as the at least one social network interaction.

11. The system of claim 9, wherein circuitry for confirming the at least one indication of an inferred familial relation associated with the at least one user, the familial relation inferred at least partly based on at least one social network interaction including at least obtaining the familial relation using at least one social network app of at least one user device associated with the user as the at least one social network interaction comprises:

circuitry for confirming the at least one indication of an inferred familial relation associated with the at least one user, the familial relation inferred at least partly based on at least one social network interaction including at least obtaining, using at least one social network app of at least one user device associated with the user as the at least one social network interaction, the familial relation via at least one contact list of the at least one user device.

12. The system of claim 1, wherein circuitry for confirming at least one indication of an inferred familial relation associated with at least one user, the familial relation inferred at least partly based on at least one social network interaction comprises:

circuitry for ascertaining a reliability indicator corresponding to the at least one indication of an inferred familial relation.

13. The system of claim 1, wherein circuitry for confirming the at least one indication of an inferred familial relation associated with the at least one user, the familial relation inferred at least partly based on at least one social network interaction including at least obtaining the familial relation using at least one social network app of at least one user device associated with the user as the at least one social network interaction comprises:

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circuitry for obtaining the at least one indication of a familial relation associated with the at least one user via at least one social networking user-device interaction from at least one social network.

14. The system of claim 13, wherein circuitry for obtaining the at least one indication of a familial relation associated with the at least one user via at least one social networking user-device interaction from at least one social network comprises:

circuitry for obtaining the at least one indication of a familial relation associated with the at least one user from the at least one social network from profile data that is associated with an account for the at least one user with the at least one social network.

15. The system of claim 13, wherein circuitry for obtaining the at least one indication of a familial relation associated with the at least one user via at least one social networking user-device interaction from at least one social network comprises:

circuitry for retrieving the at least one indication of a familial relation associated with the at least one user from at least a part of one or more servers operated by or for the at least one social network.

16. The system of claim 13, wherein circuitry for obtaining the at least one indication of a familial relation associated with the at least one user via at least one social networking user-device interaction from at least one social network comprises:

circuitry for obtaining the at least one indication of a familial relation associated with the at least one user from the at least one social network from profile data that is associated with an account for the at least one user with the at least one social network, the profile data including at least a public social network profile accessible via the Internet without social network login credentials.

17. The system of claim 13, wherein circuitry for obtaining the at least one indication of a familial relation associated with the at least one user via at least one social networking user-device interaction from at least one social network comprises:

circuitry for obtaining the at least one indication of a familial relation associated with the at least one user from the at least one social network from profile data that is associated with an account for the at least one user with the at least one social network, the profile data including at least some data associated with the familial relation which requires social network login credentials to access.

18. The system of claim 1, wherein circuitry for confirming the at least one indication of an inferred familial relation associated with the at least one user, the familial relation inferred at least partly based on at least one social network interaction including at least obtaining the familial relation using at least one social network app of at least one user device associated with the user as the at least one social network interaction comprises:

circuitry for obtaining the at least one indication of a familial relation associated with the at least one user via at least one communication-related user-device interaction from at least one communication.

19. The system of claim 1, wherein circuitry for confirming the at least one indication of an inferred familial relation associated with the at least one user, the familial relation inferred at least partly based on at least one social network interaction including at least obtaining the familial relation using at least one social network app of at least one user

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device associated with the user as the at least one social network interaction comprises:

circuitry for obtaining the at least one indication of a familial relation associated with the at least one user via at least one social networking user-device interaction from at least one membership grouping of at least one social network.

20. The system of claim 1, wherein circuitry for incorporating the at least one indication of an inferred familial relation into at least one behavioral fingerprint associated with the at least one user based at least partly on confirming the at least one inferred indication of personal relation comprises:

circuitry for deleting at least a portion of the at least one behavioral fingerprint associated with the at least one user based at least partially on the at least one indication of an inferred familial relation.

21. The system of claim 1, wherein circuitry for incorporating the at least one indication of an inferred familial relation into at least one behavioral fingerprint associated with the at least one user based at least partly on confirming the at least one indication of an inferred familial relation comprises:

circuitry for establishing between or among one or more individuals at least one linkage that reflects at least one familial relation in the at least one behavioral fingerprint that is associated with the at least one user based at least partly on the at least one indication of an inferred familial relation.

22. The system of claim 1, wherein circuitry for confirming the at least one indication of an inferred familial relation associated with the at least one user, the familial relation inferred at least partly based on at least one social network interaction including at least obtaining the familial relation using at least one social network app of at least one user device associated with the user as the at least one social network interaction comprises:

circuitry for confirming the at least one familial relation associated with the at least one user based at least partly on an inference that data related to the at least one familial relation in the at least one social network interaction is accurate.

23. The system of claim 1, wherein circuitry for confirming the at least one indication of an inferred familial relation associated with the at least one user, the familial relation inferred at least partly based on at least one social network interaction including at least obtaining the familial relation using at least one social network app of at least one user device associated with the user as the at least one social network interaction comprises:

circuitry for confirming the at least one indication of an inferred familial relation based at least partly on at least some relationship data stored in a social network profile associated with the at least one user, the at least some relationship data stored in association with the at least one social network interaction.

24. The system of claim 1, wherein circuitry for confirming the at least one indication of an inferred familial relation associated with the at least one user, the familial relation inferred at least partly based on at least one social network interaction including at least obtaining the familial relation using at least one social network app of at least one user device associated with the user as the at least one social network interaction comprises:

circuitry for accessing the at least one behavioral fingerprint to determine whether the behavioral fingerprint includes at least some data indicative of the familial relation between the user and an entity associated with the inferred familial relation.

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25. The system of claim 1, wherein circuitry for authenticating an identity of a purported authorized user in association with a purchase transaction using a mobile device associated with the at least one user based at least partly on the incorporated at least one indication of an inferred familial relation of the at least one behavioral fingerprint associated with the at least one user comprises:

circuitry for obtaining a dollar amount associated with a requirement for authentication; and

circuitry for, if the purchase transaction using the mobile device is greater than the obtained dollar amount associated with a requirement for authentication, obtaining a verification from the inferred familial relation that a content of the purchase transaction is likely associated with purchase by the authorized user.

26. The system of claim 1, wherein circuitry for authenticating an identity of a purported authorized user in association with a purchase transaction using a mobile device associated with the at least one user based at least partly on the incorporated at least one indication of an inferred familial relation of the at least one behavioral fingerprint associated with the at least one user comprises:

circuitry for initiating an inquiry to at least one entity associated with the inferred familial relation, the inquiry including at least a request for confirmation that the purported authorized user is likely to be the at least one user at least partly based on at least one aspect of the purchase transaction and at least some personal knowledge of the at least one entity related to the at least one aspect of the purchase transaction, wherein a lack of confirmation provides an inference that the mobile device is no longer in the possession of the user.

27. The system of claim 1, wherein circuitry for determining an electronic address for the familial relation based at least partly on the at least one behavioral fingerprint associated with the at least one user comprises:

circuitry for determining an electronic address for the familial relation based at least partly on at least one social network profile associated with the inferred familial relation.

28. The system of claim 27, wherein circuitry for determining an electronic address for the familial relation based at least partly on at least one social network profile associated with the inferred familial relation comprises:

circuitry for determining at least one of a phone number, an email address, a screen name, or an account identifier from the at least one social network profile associated with the inferred familial relation.

29. The system of claim 28, wherein circuitry for transmitting at least one message to the determined electronic address for the familial relation, including at least one indication of at least one description or at least one category of product associated with the at least one purchase transaction comprises:

circuitry for transmitting at least one message to the determined electronic address for the familial relation, including at least one request for confirmation of likelihood that the at least one user would purchase an item associated with the at least one description or at least one category.

30. The system of claim 1, wherein circuitry for transmitting at least one message to the determined electronic address for the familial relation, the transmitted at least one message requesting confirmation that the purchase transaction using the mobile device is likely associated with the at least one user comprises:

circuitry for transmitting at least one message to the determined electronic address for the familial relation,

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including at least one indication of at least one description or at least one category of product associated with the at least one purchase transaction.

31. The system of claim 1, wherein circuitry for, responsive to at least one message received from the electronic address for the familial relation, authorizing the purchase transaction if the familial relation provides confirmation via the received at least one message that the purchase transaction using the mobile device is likely associated with the at least one user comprises:

circuitry for providing an indication to a merchant that the purchase transaction is authorized based on at least one received confirmation associated with the familial relation that the purported authorized user of the mobile device is the at least one user.

32. The system of claim 1, wherein circuitry for, responsive to at least one message received from the electronic address for the familial relation, authorizing the purchase transaction if the familial relation provides confirmation via the received at least one message that the purchase transaction using the mobile device is likely associated with the at least one user comprises:

circuitry for providing an indication to a merchant that the purchase transaction is authorized based on at least one received confirmation associated with the familial relation that the purported authorized user of the mobile device is the at least one user at least partially based on personal knowledge of the familial relation that the at least one user intended to conduct the purchase transaction.

33. The system of claim 1, wherein circuitry for incorporating the at least one indication of an inferred familial relation into at least one behavioral fingerprint associated with the at least one user based at least partly on confirming the at least one indication of an inferred familial relation comprises:

circuitry for incorporating the at least one indication of an inferred familial relation into at least one behavioral fingerprint associated with the at least one user, the at least one behavioral fingerprint including at least one or more indicators of utilization of one or more user devices by the at least one user.

34. A system, comprising:

a computing device; and

one or more instructions which when executed on the computing device cause the computing device to at least:

confirm at least one indication of an inferred familial relation associated with at least one user, the familial relation inferred at least partly based on at least one social network interaction;

incorporate the at least one indication of an inferred familial relation into at least one behavioral fingerprint associated with the at least one user based at least partly on confirming the at least one indication of an inferred familial relation; and

authenticate an identity of a purported authorized user in association with a purchase transaction using a mobile device associated with the at least one user based at least partly on the incorporated at least one indication of an inferred familial relation of the at least one behavioral fingerprint associated with the at least one user, including at least:

determining an electronic address for the familial relation based at least partly on the at least one behavioral fingerprint associated with the at least one user;

transmitting at least one message to the determined electronic address for the familial relation, the

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transmitted at least one message requesting confirmation that the purchase transaction using the mobile device is likely associated with the at least one user; and

responsive to at least one message received from the electronic address for the familial relation, authorizing the purchase transaction if the familial relation provides confirmation via the received at least one message that the purchase transaction using the mobile device is likely associated with the at least one user.

35. A computer program product, comprising:
at least one non-transitory computer-readable medium including at least:

one or more instructions for confirming at least one indication of an inferred familial relation associated with at least one user, the familial relation inferred at least partly based on at least one social network interaction;

one or more instructions for incorporating the at least one indication of an inferred familial relation into at least one behavioral fingerprint associated with the at least one user based at least partly on confirming the at least one indication of an inferred familial relation; and

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one or more instructions for authenticating an identity of a purported authorized user in association with a purchase transaction using a mobile device associated with the at least one user based at least partly on the incorporated at least one indication of an inferred familial relation of the at least one behavioral fingerprint associated with the at least one user, including at least:

one or more instructions for determining an electronic address for the familial relation based at least partly on the at least one behavioral fingerprint associated with the at least one user;

one or more instructions for transmitting at least one message to the determined electronic address for the familial relation, the transmitted at least one message requesting confirmation that the purchase transaction using the mobile device is likely associated with the at least one user; and

one or more instructions for, responsive to at least one message received from the electronic address for the familial relation, authorizing the purchase transaction if the familial relation provides confirmation via the received at least one message that the purchase transaction using the mobile device is likely associated with the at least one user.

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